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THE UNIVERSITY OF ALBERTA

ADMINISTRATIVE DECISION MAKING IN SCHOOLS

by

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A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE
OF DOCTOR OF PHILOSOPHY IN EDUCATIONAL ADMINISTRATION

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SPRING, 1980

THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

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ABSTRACT

This study investigated the nature of administrative decision making in a sample of elementary and secondary schools. The specific purpose of the study was to assess the validity of the Vroom-Yetton model of decision making.

Data were collected from 33 school principals through two structured interviews and a questionnaire. The initial interview was used to collect descriptions of decision situations which principals faced and their perception of the seven situational factors for which provision is made in the Vroom-Yetton model. During a subsequent interview, information on how each decision situation was resolved was collected and judgements of the outcomes were made on four criteria. Principals' perceptions of the general nature of school decision making were collected through a questionnaire. Teachers in the same schools participated through a questionnaire and commented on decision making generally and on the particular cases which had been identified by the principals; 385 teachers were involved.

Analysis of the data revealed that administrative decision making in the schools in the sample was perceived as being both successful and participative. There were differences in perceptions between principals and teachers, the latter tending to perceive decision making to be more participative than the principals. While most principals believed staff were satisfied with their present involvement in decision making only about one-half of the teachers agreed, the majority of those who did not agree considered more participation to be desirable.

Reports from the principal and three teachers were received about most of the individual situations. Wide discrepancies in the perception of the process used in making the decision were observed. Teachers' perceptions of decision success were significantly related to the degree of participation of the process used.

The data supplied by principals were used to determine if the Vroom-Yetton model was valid in the school setting. No statistically significant relationship was found to exist. Application of the teacher supplied data to the model resulted in the establishment of a statistically significant but weak relationship. Analysis indicated that this relationship was largely dependent upon the increased involvement of teachers in decisions consistent with the Vroom-Yetton model. The validity of the model could not, therefore, be confirmed.

Analysis of decisions inconsistent with the model led to suggestions for modifications. When the principal data were applied to the modified model, no statistically significant result was revealed. When teacher data were applied to the modified model, statistically significant relationships, attributable to the effect of consistency of decision process used with the prescriptions of the model,were revealed. Within the parameter that the judgement of decision process used as well as the ratings of outcomes should be made by teachers, the findings support the validity of the modified model in the school setting.

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TABLE OF CONTENTS

Page

ABSTRACT iv

ACKNOWLEDGEMENTS v

LIST OF TABLES xviii

LIST OF FIGURES xxiii

Chapter

1 INTRODUCTION TO THE STUDY 1

THE RESEARCH PROBLEM 1

Overview of the Model 2

Research Questions 5

Justification for the Study 6

Definition of Terms 7

Administrative decision 7
Autocratic decision 7
Consensus decision 7
Consultative decision 7
Decision process or decision style 7
Decision quality 7
Feasible set 8
Group decision 8
Overall effectiveness 8
Parliamentary decision 8
Predictive validity 8
Subordinate acceptance 8
Unanimous decision 8

Delimitations 8

Limitations 9

Chapter Page

1 ORGANIZATION OF THE THESIS 9

2 REVIEW OF RELATED LITERATURE 11

THE VROOM-YETTON MODEL 11

Components of the Model 12

The Importance of Decision Making 15

Separation of Quality and Acceptance Requirements 17

Participation and Subordinate Acceptance 18

Some Reservations About Participation 19

Variability of Decision Styles 23

Decision Process Taxonomies 26

Alternative Decision Taxonomies 27

Decision Process and Explicitness 35

Situational Factors 37

CHARACTERISTICS OF SCHOOL DECISION MAKING 44

Schools as Human Service Organizations 47

Further Considerations in School Decision Making 48

CONCLUSIONS 53

3 THE METHODOLOGY OF THE STUDY 56

TESTING THE MODEL 56

Validity of the Model 57

Chapter Page

3 Concurrent and Predictive Validity 59

Other Aspects of the Study 60

COLLECTION OF DATA 61

Principal Follow-up Interviews 62

Staff Involvement 63

Considerations Underlying the Data Collection 63

THE SAMPLE 65

The Schools 65

The Principals 66

The Teachers 68

Size of the Sample 69

TREATMENT OF DATA 70

Statistical Considerations 70

Determining the Validity of the Model 73

CONSIDERATIONS ARISING FROM METHODOLOGY 75

The Nature of the Interviews 75

Subordinate Reports 76

HYPOTHESES OF THE STUDY 78

Hypothesis 1.1 78

Hypothesis 1.2 78

Hypothesis 1.3 79

Hypothesis 2 79

Chapter Page

3 Hypothesis 3 79

Hypothesis 4 79

Hypothesis 5 79

Hypothesis 6 79

Hypothesis 7 79

Hypothesis 8 79

Hypothesis 9 79

Hypothesis 10 79

Hypothesis 11 80

Hypothesis 12 80

Hypothesis 13 80

Hypothesis 14 80

Hypothesis 15 80

Hypothesis 16 80

Hypothesis 17 80

Hypothesis 18 80

Hypothesis 19 80

Hypothesis 20 80

Hypothesis 21 81

Hypothesis 22 81

Hypothesis 23 81

Hypothesis 24 81

4 ADMINISTRATIVE DECISION MAKING IN SCHOOLS AS PERCEIVED BY PRINCIPALS 82

PRINCIPALS' GENERALIZED PERCEPTIONS REGARDING ADMINISTRATIVE DECISION MAKING 82

Chapter Page

4 Perceived Use of Decision Styles 82

Hypothesis 1.1 83

Hypothesis 1.2 83

Hypothesis 1.3 83

Conclusions Relating to Hypothesis 1 86

Principals' Perceptions Regarding Staff Involvement 87

Hypothesis 2 87

The Effects of Involvement on Decision Making 89

Principal Characteristics and Perceived Frequency of Use of Decision Styles 91

ANALYSIS OF SPECIFIC CASES OF DECISION MAKING IN SCHOOLS 93

Institutional Characteristics and Choice of a Decision Process 95

Hypothesis 3 95

Experience of Principal in School 95

Frequency of Use of Decision Style and Sex of Principal 97

Size of School and Use of Decision Process 98

Type of School and Decision Process 99

Nature of Decision and Decision Process 100

Summary 105

Chapter Page

4 ADMINISTRATIVE DECISION MAKING IN SCHOOLS AND THE VROOM-YETTON MODEL 106

Consistency with the Feasible Set 108

Decision Success 111

Consistency with the Feasible Set and Decision Success 111

Hypothesis 4 111

Discussion 112

Consistency, Success and Decision Process 113

Discussion 115

Principals' Rating of Decision Outcomes 116

Hypothesis 5 116

Consistency with the Feasible Set and Decision Outcomes 118

Hypothesis 6 118

Decision Process, Consistency with the Feasible Set and Principals' Ratings of Decision Outcomes 119

Hypothesis 7 119

The Decision Rules 120

Hypothesis 8 120

Individual Rule Violations 121

Hypothesis 9 121

Individual Decision Rules and Overall Effectiveness 126

Summary 127

Chapter Page

4 Discussion 127

SUMMARY 128

5 ADMINISTRATIVE DECISION MAKING IN SCHOOLS AS PERCEIVED BY TEACHERS 129

TEACHERS' GENERALIZED PERCEPTIONS REGARDING ADMINISTRATIVE DECISION MAKING 129

Teachers' Perceptions of Decision Processes Used in Administrative Decision Making 129

Hypothesis 10 129

Comparison of Teacher and Principal Perceptions of Frequency of Use of Decision Processes 131

Perceptions of Decision Styles Used and Teacher Characteristics 133

Perceived Use of Decision Processes and Type of School 136

Hypothesis 11 139

Differential Desires by Teachers for Participation in Decision Making 141

Hypothesis 12 141

TEACHERS' PERCEPTIONS CONCERNING SPECIFIC CASES OF DECISION MAKING 144

Decision Process Used 144

Hypothesis 13 145

The Effect of Differences in Perceptions of Decision Process Used 147

Hypothesis 14 147

Discussion 149

Chapter Page

5 Relative Importance of Quality and Acceptance in Determining Decision Outcomes 149

Hypothesis 15 149

Perceptions of Decision Outcomes 150

Hypothesis 16 150

Teachers as Decision Makers 151

Hypothesis 17 151

SUMMARY 154

6 ADMINISTRATIVE DECISION MAKING IN SCHOOLS AND THE VROOM-YETTON MODEL 155

COMPARISON OF TEACHER AND PRINCIPAL DATA 155

Decision Success 155

Teachers' Perceptions of Decision Attributes 156

Hypothesis 18 156

Teachers' and Principals' Perceptions of Use of Decision Processes 158

Hypothesis 19 159

Subordinate Influence on Decision Making 161

Hypothesis 20 161

Decision Importance and Teachers' Perceptions of Decision Process Used 163

VALIDITY OF THE VROOM-YETTON MODEL 165

Teachers' Perceptions of Decision Process Used, Consistency with the Feasible Set and Decision Success 166

Hypothesis 21 167

Hypothesis 22 170

Chapter Page

6 Consistency with the Feasible Set and Decision Outcomes 172

Hypothesis 23 172

Teacher Ratings of Decision Outcomes and Consistency with the Feasible Set 175

Hypothesis 24 176

SUMMARY 178

7 TOWARDS A REVISED MODEL FOR SCHOOL DECISION MAKING 181

DECISION RULE VIOLATIONS 182

Decision Rule Violations and Decision Process S1 183

The Leader Information Rule 186

The Acceptance Rule 188

The Unstructured Problem Rule 190

Unsuccessful Decisions Using the S1 Process 191

Consistency and the Group Processes 194

Consistency with the Feasible Set and the Consultative Processes 199

THE EFFECTS OF CHANGES IN THE MODEL 201

Other Possible Areas of Discrepancy 202

RESULTS OF EXPERIMENTATION WITH THE MODEL 203

The Original Model 203

Modifying Quality, Acceptance and Prior Probability Responses 203

Chapter Page

7 Modifying Information, Acceptance and Prior Probability Attributes 207

Decision Success and Consistency with the Feasible Set Using Modified Perceptions of Information, Quality, Prior Probability and Goals 210

Summary 213

ALTERNATIVE DECISION MODELS 213

SUMMARY 216

8 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS 218

SUMMARY 218

Purpose of the Study 218

Data Collection 219

Statistical Treatment 220

Results 221

CONCLUSIONS 225

IMPLICATIONS OF THE STUDY 228

Implications for the Operation of Schools 229

Implications for Educational Research 233

Implications for the Preparation of Educational Administrators 234

CONCLUDING NOTE 235

BIBLIOGRAPHY 236

Appendices

A Interview Schedule - Interview 1 245

B Interview Schedule - Interview 2 248

Appendices Page

C Invitation to Participate 252

D Principal Questionnaire 254

E Teacher Questionnaire 257

F Principal's Interview Notes 260

G Case Report - Class Size 262

H Case Report - Supervision 264

I Case Report - Learning Materials 266

J Case Report - Timetable 268

K Case Report - Instituting a Course 270

L Teachers' Perceptions of Illustrative Cases 272

M Recoding of Acceptance Attribute 274

LIST OF TABLES

Table Page

2.1 Decision Processes for Group Problems Proposed by Various Writers 36

2.2 Contingency Variables Relevant in Decision Making Research 45

2.3 Examples of Decisions in Four Types of Judgement Contexts 51

3.1 Distribution of Schools in the Sample by Type and Size 66

3.2 Distribution of Principals by Years of Experience 67

3.3 Teaching Experience of Teacher Respondents 69

4.1 Frequency of Use of Decision Styles in Administrative Decision Making as Perceived by Principals 84

4.2 Priority of Perceived Use of Decision Styles 86

4.3 Principals' Ratings of Staff Involvement in Administrative Decision Making 87

4.4 Association Between Principal Characteristics and Perceived Frequency of Use of Decision Processes 92

4.5 Frequency of Use of Seven Decision Processes - Case Data 94

4.6 Frequency of Decision Process Used by Time as Principal in Present School 96

4.7 Frequency of Use of Decision Process and Sex of Principal.. 97

4.8 Frequency of Use of Decision Processes by Number of Teachers in Staff 98

4.9 Frequency of Use of Decision Process by Type of School 99

4.10 Frequency of Use of Decision Processes Associated with Different Functional Areas 101

4.11 Frequency of Use of Decision Processes Associated with Mintzberg's Categories 103

Table Page

4.12 Frequency of Use of Decision Processes Associated with Castore's Categories 105

4.13 Frequency Distribution of Responses to Decision Attribute Questions in the Vroom-Yetton Model 107

4.14 Consistency with the Feasible Set and Decision Success 112

4.15 Decision Process, Success and Consistency with the Feasible Set 114

4.16 Decision Process, Success and Consistency with the Feasible Set 114

4.17 Distribution of Cases by Principals' Ratings of Outcomes 116

4.18 Mean Principal Ratings of Decision Outcomes by Process Used in Making Decision 117

4.19 Mean Ratings of Decision Outcome and Consistency with the Feasible Set 118

4.20 Number of Decision Rule Violations and Decision Outcomes 121

4.21 Frequency of Application of Individual Decision Rules and Violations 122

4.22 Quality Rule Violations and Quality Ratings 123

4.23 Decision Rule Violations and Mean Acceptance Ratings 125

4.24 The Effect of Decision Violations on Overall Effectiveness of Decisions 126

5.1 Distribution of Perceptions of Frequency of Use of Each of Seven Decision Processes 130

5.2 Frequency of Use of Decision Processes: Comparison of Teacher and Principal Perceptions 132

5.3 Relationships Between Teacher Characteristics and Perceived Use of Decision Styles 134

Table Page

5.4 Relationship Between Type of School and Use of Decision Processes 137

5.5 Median Ratings of Frequency of Use of Decision Processes as Perceived by Sub-Groups of Teachers 138

5.6 Distribution of Frequencies of Perceived Present Involvement in Decision Making and Desired Level 140

5.7 Discrepancy Between Desired and Perceived Present Involvement in Decision Making According to Sex 142

5.8 Discrepancy Between Desired and Perceived Involvement in Decision Making Among Teachers in the Sample 143

5.9 Perceptions of Use of Decision Processes - Case Data 144

5.10 Relationship Between Decision Process Used and Teacher Ratings of Outcomes 148

5.11 Differences Between Principal and Teacher Ratings of Decision Outcomes 151

5.12 Agreement Between Decision Process Used and Decision Outcomes 153

6.1 Comparison of Teachers' and Principals' Perceptions of Frequency of Use of Decision Processes - Adjusted Data 159

6.2 Principals' and Teachers' Perceptions of Decision Process Used - Case Data 162

6.3 Decision Importance and Choice of Decision Process as Perceived by Teachers 164

6.4 Decision Success and Consistency with the Feasible Set - Teachers' Perceptions of Decision Process Used 168

6.5 Decision Success and Agreement with the Feasible Set of Decision Process Used as Perceived by Teachers 169

Table Page

6.6 Principals' Perception of Decision Process Used, Consistency with the Feasible Set and Teachers' Perceptions of Decision Success 170

6.7 Relationship Between Feasible Set and Teachers' Perception of Decision Outcome for Each Decision Making Process 171

6.8 Consistency, Principals' Perceptions of Decision Process Used, and Teachers' Ratings of Decision Outcomes 173

6.9 Consistency, Teachers' Ratings and Decision Process Used 174

6.10 Decision Outcomes and Consistency with the Feasible Set - Teachers' Perceptions 176

6.11 Teachers' Perceptions of Decision Outcomes and the Validity of the Vroom-Yetton Model 179

7.1 Analysis of Successful Decisions Made Using an S1 Process Which were Inconsistent with the Feasible Set 184

7.2 Inconsistent, Successful Decisions Made Using Group Decision Processes 194

7.3 Comparison of Principal and Teacher Perceptions of Process Used in Decision in Which the Goals Rule was Violated 196

7.4 Consistency with the Feasible Set and Decision Success Using Original Data 204

7.5 Consistency with the Feasible Set and Ratings of Overall Effectiveness Using Original Data 204

7.6 Decision Success and Consistency with the Feasible Set, Using Modified Perceptions of Quality, Acceptance and Prior Probability 205

Table Page

7.7 Consistency with the Feasible Set, Ratings of Overall Effectiveness and Modified Perceptions of Quality, Acceptance and Prior Probability 206

7.8 Consistency with the Feasible Set, Decision Success and Modified Perceptions of Information, Acceptance and Prior Probability Attributes 208

7.9 Consistency with the Feasible Set, Ratings of Overall Effectiveness and Modified Perceptions of Information, Acceptance and Prior Probability Attributes 209

7.10 Consistency with the Feasible Set and Decision Success, Modified Perceptions of Attributes and the Suspension of the Goal Congruency Rule 210

7.11 Consistency with the Feasible Set, Ratings of Overall Effectiveness, Modified Perceptions of Attributes and Suspension of the Goal Congruency Rule 211

7.12 Decision Success Associated with Use of Specified Decision Processes in Different Functional Areas 215

7.13 Decision Effectiveness Associated with Use of Specified Decision Processes in Different Functional Areas 216

LIST OF FIGURES

Figure Page

1.1 Leadership Decision Styles for Group Problems in Vroom-Yetton Model 4

2.1 The Situational Leadership Model of Vroom and Yetton 14

2.2 Leadership Behavior 29

4.1 Classification of Decision Processes by Castore's Categories 103

6.1 Teachers' Perceptions of Decision Process Used, Decision Outcomes and Their Relation with Principals' Perceptions in Testing the Validity of the Vroom-Yetton Model 166

8.1 Vroom-Yetton Model Modified for Use in Schools 227

Chapter 1

INTRODUCTION TO THE STUDY

Two broad categories of decisions are made in schools. The first are those decisions directly involved with the instructional process which are made in the classroom by teachers. Owens (1970:91) noted: "Teachers. . . make crucial decisions which actually determine to a large extent the impact the school will have on the learner." The second category is concerned with administrative matters. Such decisions cover a diversity of topics and involve the school's relationships with professional staff, other staff, students, central administrations, boards and the community. These decisions are, for the most part, the responsibility of the school principal.

THE RESEARCH PROBLEM

The purpose of this study was to investigate administrative decision making in schools and particularly to test, in the school setting, the validity and utility of a model developed by Victor H. Vroom and Philip Yetton, which was designed to guide administrators in deciding the nature and amount of involvement of their subordinates in the decision making process. The decisions which form the focus of this study are those which lie within the decisional responsibility of the school principal and have implications for several staff members.

Overview of the Model

Throughout the 1960's many writers in the fields of organizational design and leadership took the view that the participation of all subordinates in the total decision making process was essential if organizations were to be both efficient and personally satisfying for those who worked in them. While Vroom and Yetton were concerned with the involvement of subordinates in decision making they did not take this approach. Vroom (1970:239) noted:

> The critics and proponents of participative management would do well to direct their efforts towards identifying the properties of situations in which different decision making approaches are effective rather than wholesale condemnation or deification of one approach.

Central to the Vroom-Yetton model was the belief that choice of an appropriate decision process was an important factor in deciding the success or otherwise of a decision. Further, the model was based upon the belief that in each decisional situation there were a number of factors of which account must be taken in deciding if involvement of subordinates was justified and, if so, the degree and nature of such involvement. Vroom and Yetton took the view that in organizations, decision making was the responsibility of leaders. Frequent reference, however, was made by them to managers, and the terms appear to be used interchangeably.

The model was based on the belief that the effectiveness of a decision was the product of two components: the quality of the decision and its acceptance by subordinates. Vroom and Yetton follow Maier (1955, 1963) in equating decision quality with the "objective or impersonal" aspects of the decision, that is, with the adequacy of information on which the decision was based. Subordinate acceptance of decisions was believed, by Vroom and Yetton, to be dependent upon the degree of participation of the subordinate in the decision process. Vroom and Yetton proposed five decision processes which they contended were points on a continuum of subordinate influence as illustrated in Figure 1.1.

The appropriateness or effectiveness of each of the five decision processes - AI, AII, CI, CII, GII - is contingent upon situational factors. Each process has potential for yielding decisions which are of adequate quality and which are accepted by subordinates. The problem for the decision maker is to determine which process (or processes) is appropriate for a particular decision. Vroom and Yetton developed a number of decision rules intended to "protect" or ensure decision quality and subordinate acceptance. These rules were designed to take account of the particular conditions applying in each separate decision situation. The rules are operationalized through a series of questions each requiring a yes or no answer. These answers serve to define the decision situation and to delimit the decision processes to those which are appropriate for that particular situation.

Depending upon the nature of the decision situation, the feasible set (the processes likely to be effective) could consist of a number of alternate processes or only one of the five. Vroom and Yetton suggested that where there was more than one decision process in the feasible set, choice might be made on the basis of time-effectiveness in which case they recommended use of the least participative process. However, if the development of an effective problem solving team was desired then choice of a more participative process from within the

Influence of Subordinates			
Low	Autocratic	A I	Leader solves the problem or makes the decision alone, using the information available at the time.
		AII	Leader obtains the necessary information from subordinates, then decides the solution to the problem. Leader may or may not tell subordinates what the problem is in getting the information from them. The role played by subordinates is clearly one of providing the necessary information, rather than generating or evaluating alternative solutions.
	Consultative	C I	Leader shares problem with relevant subordinates individually, getting their ideas and suggestions without bringing them together as a group. Then leader makes the decision, which may or may not reflect subordinates' influence.
		CII	Leader shares the problem with subordinates as a group, obtaining their collective ideas and suggestions. Leader then makes the decision, which may or may not reflect subordinates' influence.
	Group	GII	Leader shares the problem with subordinates as a group. Together they generate and evaluate alternatives and attempt to reach agreement (consensus) on a solution. Leader's role is much like that of a chairman. Leader does not try to influence the group to adopt "his" solution, and is willing to accept and implement any solution which has the support of the entire group.
High			

Figure 1.1 Leadership Decision Styles for Group Problems in Vroom-Yetton Model

feasible set was recommended.

The Vroom-Yetton model was designed as a general model for use in a variety of settings. However, analysis of the case studies on which much of the model was based indicated that most of these were located in commercial and industrial situations. The present study addressed the utility of the model in a quite different context, that of elementary and secondary schools in the Province of Alberta.

Research Questions

In order to determine the utility of the Vroom-Yetton model in the school setting, it was necessary to test both its validity and its applicability. Answers to a number of questions were required to determine utility. The most important of the questions to which answers were sought were as follows:

(1) Do school principals use a variety of decision processes in making administrative decisions in schools?

(2) To what extent does the Vroom-Yetton taxonomy reflect school decision making practices?

(3) Are there situational influences in schools other than those described by Vroom and Yetton which exert significant influences on the choice of decision processes?

(4) Is the use of procedures consistent with the Vroom-Yetton model correlated with the success of administrative decisions in schools and, if so, is a model involving the evaluation of fewer problem attributes equally effective?

(5) Do principals attach different emphases to decision quality and subordinate acceptance in making administrative decisions?

Answers to a number of questions of lesser importance were also sought:

(6) To what extent do the perceptions of educational administrators agree with those of their subordinates as to the decision process used in arriving at decisions?

(7) To what extent do the perceptions of educational administrators agree with those of their subordinates in respect of the success of decisions made using different decision processes?

(8) To what extent does the desire of teachers for involvement in the decision making process differ from their perceived involvement?

(9) Do teachers who perceive themselves to have been more fully involved in the decision making process also perceive decisions to be more acceptable and more effective than teachers who perceive themselves to have been less involved?

These questions will be framed as a series of hypotheses following consideration of these and related issues in the review of literature undertaken in Chapter 2.

Justification for the Study

Because decision making is an important aspect of the work of administrators, any technique which promotes the making of decisions of improved quality has significance. Testing of the Vroom-Yetton model in other situations had indicated its ability to improve decision outcomes through guiding the choice of an appropriate decision process. If the model was found to be valid in the school setting then a similar improvement in decision outcomes, through its use, would have benefit for schools. If the study indicated that the model had validity, which means that use of the model increased the probability of making effective decisions, this would represent an extension of present theoretical knowledge. This new position would then represent a foundation for further investigations which might focus on matters such as, "Who should be involved in those decisions which are best made through the use of participative processes?"

If the model proved valid there would be implications for the preparation of administrators. This would involve several aspects. The first would focus on providing theoretical background to the use of the model and the implications of its assumptions. Secondly, facility in what Vroom and Yetton refer to as the coding process or the assessment of the decision attributes would need to be developed. Finally, the skills associated with the use of the different decisional processes required by the model would need to be developed.

DEFINITIONS, DELIMITATIONS AND LIMITATIONS

Definition of Terms

A number of terms require explicit definition because of their specific meanings within the Vroom-Yetton model and the present study.

Administrative decision. Those decisions made in schools which are not made by teachers in the course of the instructional process.

Autocratic decision. Is one in which the manager does not seek opinion from subordinates before making a decision.

Consensus decision. One in which there is substantial agreement between the parties involved in the decision to the extent that all are prepared to accept or "go along with" the decision.

Consultative decision. One in which information and/or opinion is sought before the decision is made.

Decision process or decision style. The decision of a manager as to the degree of involvement of subordinates in the decision making process.

Decision quality. The quality and relevance of the information available in making the decision and the extent to which this information was used in making the most rational decision possible.

Feasible set. The decision or decisions prescribed in a given situation by the Vroom-Yetton model.

Group decision. Those decisions which affect all or a major subset of the subordinates reporting to the leader.

Overall effectiveness. The extent to which the decision contributes to the attainment of the goals of the organization.

Parliamentary decision. One in which a voting procedure is used in making the decision.

Predictive validity. The capacity of the model to specify a suitable decision process prior to knowledge of the decision's outcomes being available.

Subordinate acceptance. The extent to which subordinates agree with the decision and are willing to attempt to make the decision work effectively.

Unanimous decision. One in which there is complete agreement between the superordinate and all subordinates involved in the decision. The superordinate does not try to influence the decision and is willing to implement any decision which is acceptable to all participants.

Delimitations

The study was based on only 33 schools, most of which were in communities in or adjacent to Edmonton. There are thus limitations to the extent to which generalizations may be drawn from the study.

The study focussed only on the decisions identified by principals. It was realized that, particularly in large schools, persons other than principals had responsibility for administrative decision making. Any generalization proposed from this study must take account of this restriction.

Limitations

While the use of a longitudinal method of case preparation and the use of perceptions of decision outcomes by persons other than those reporting the case removed two of the weaknesses of earlier studies, the need to collect ratings of success from persons who had little familiarity with the precise interpretation of the language used in the model was a possible source of weakness.

Decisions were collected towards the end of the school year when decisions of particular importance to staff members were being made. It is possible therefore, that the decision processes used were not representative of those used throughout the year.

The study collected information from teachers and principals concerning a range of diverse situations. Where this information does not coincide, it does not mean that one or other view is incorrect but that the various views reflect different perceptions of the same situation and are accepted as valid views of what the different parties perceived to have taken place.

ORGANIZATION OF THE THESIS

This chapter has provided a background to the study, its purpose, justification, an explanation of terms and the limitations and delimitations of the study. The following chapter is devoted to a more detailed explanation of the Vroom-Yetton model and a review of the literature relevant to the various issues arising from the model.

In Chapter 3 an overview of the research design is provided. Some issues related to the methodology of the study and a description of the statistical analysis to which data were subjected is also provided.

Chapters 4, 5 and 6 provide a description and analysis of the data. The basis for the organization of these chapters is the source of the data used. Chapter 7 reviews the findings and provides some consideration of how the model might be modified for use in the school setting. This chapter also looks at implications arising from this study for school administrative decision making generally.

The concluding chapter provides a summary of the study, its conclusions and some implications of the findings for the theory and practice of educational administration. Some suggestions for further research are also made.

Chapter 2

REVIEW OF RELATED LITERATURE

The purpose of this chapter is to provide a brief review of the literature which is closely related to the specific concerns of this study. This delimitation is necessary because there is a voluminous literature on many broad topics such as decision making theory, leadership and leadership styles, the role of the manager and group problem solving all of which are generally related to the topic but which do not focus on the specific questions with which the investigation was concerned. The literature review will therefore provide a brief explanation of the Vroom-Yetton model within the context of decision making generally, the major assumptions upon which the model is based, special considerations underlying school decision making and the implications of each of these factors. Literature relevant to specific aspects of the methodology used will be reviewed in Chapter 3.

THE VROOM-YETTON MODEL

The model was developed by Vroom and Yetton and was made public through their joint publication entitled Leadership and Decision Making (1973). The initial work has been subjected to a great deal of investigation, and a number of revisions have been made. Unless otherwise specified, the form of the Vroom-Yetton model assumed in this study is that used by Vroom and Jago (1978).

Components of the Model

The Vroom-Yetton model is a general model dealing both with individual problems, those in which only one subordinate is involved and group problems. These were described by Maier et al. (1957:8) as ". . . those decisions which affect all or a major subset of the subordinates reporting to the leader." While most of the decision processes are common to both individual and group problems, in the latter there is no provision for delegation.

The Vroom-Yetton model, at the time of its development, constituted a major divergence from much of the then current belief surrounding the leadership function. At that time leadership was seen by some as a series of traits or relatively unchanging personality characteristics which determined a manager's behaviour. Vroom and Yetton, however, took the view that a manager's behaviour could be and was varied to fit different situations. Yetton and Vroom (1978:134) recalling this view noted:

> Their shift from a trait theory to a contingency theory is analogous to a switch from the question of which single style a manager does or should use, to the questions of which combination of styles does or should a manager use, and how does he or should he map them onto the needs of different problem situations.

Vroom and Yetton proposed that in each situation there were up to seven variables which had implications for the quality and subordinate acceptance of a decision and thus for its overall effectiveness. These situational variables, which were expressed as questions, were defined by Yetton and Vroom (1978:135) and are shown below:

A.	Quality:	Does the problem possess a quality requirement?
B.	Information:	Do I have sufficient information to make a quality decision?

C.	Structure:	Is the problem structured?
D.	Acceptance:	Is acceptance of the decision by subordinates important for effective implementation?
E.	Prior Probability:	If I were to make the decision myself, is it reasonably certain that it would be accepted by my subordinates?
F.	Goal Congruence:	Do subordinates share the organizational goals to be attained in solving this problem?
G.	Conflict:	Is conflict among subordinates likely in preferred solutions?

The questions can be answered either "yes" or "no" for each decision situation. By tracing these answers along a decision tree, managers are led to a "feasible set" of decision processes applicable to the particular decision as is shown in Figure 2.1.

The feasible set may also be defined on the basis of a series of decision rules. A slightly modified version of the rules relating to group problems is shown below:

1. The Information Rule: If the quality of the decision is important and if the leader does not possess enough information or expertise to solve the problem by himself AI is eliminated from the feasible set.

2. The Trust Rule: If the quality of the decision is important and if the subordinates cannot be trusted to base their efforts to solve the problem on organizational goals GII is eliminated from the feasible set.

3. The Unstructured Problem Rule: When the quality of the decision is important, the leader lacks the necessary information or expertise to solve the problem by himself, and if the problem is unstructured. . . AI, AII and CI are eliminated from the feasible set.

4. The Acceptance Rule: If the acceptance of the decision by subordinates is critical to effective implementation and if it is not certain that an autocratic decision made by the leader would receive that acceptance AI and AII are eliminated from the feasible set.

A. Does the problem possess a quality requirement?

B. Do I have sufficient information to make a high quality decision?

C. Is the problem structured?

D. Is acceptance of the decision by subordinates important for effective implementation?

E. If I were to make this decision by myself, am I reasonably certain that it would be accepted by my subordinates?

F. Do the subordinates share the organizational goals to be attained in solving this problem?

G. Is conflict among subordinates likely in preferred solutions?

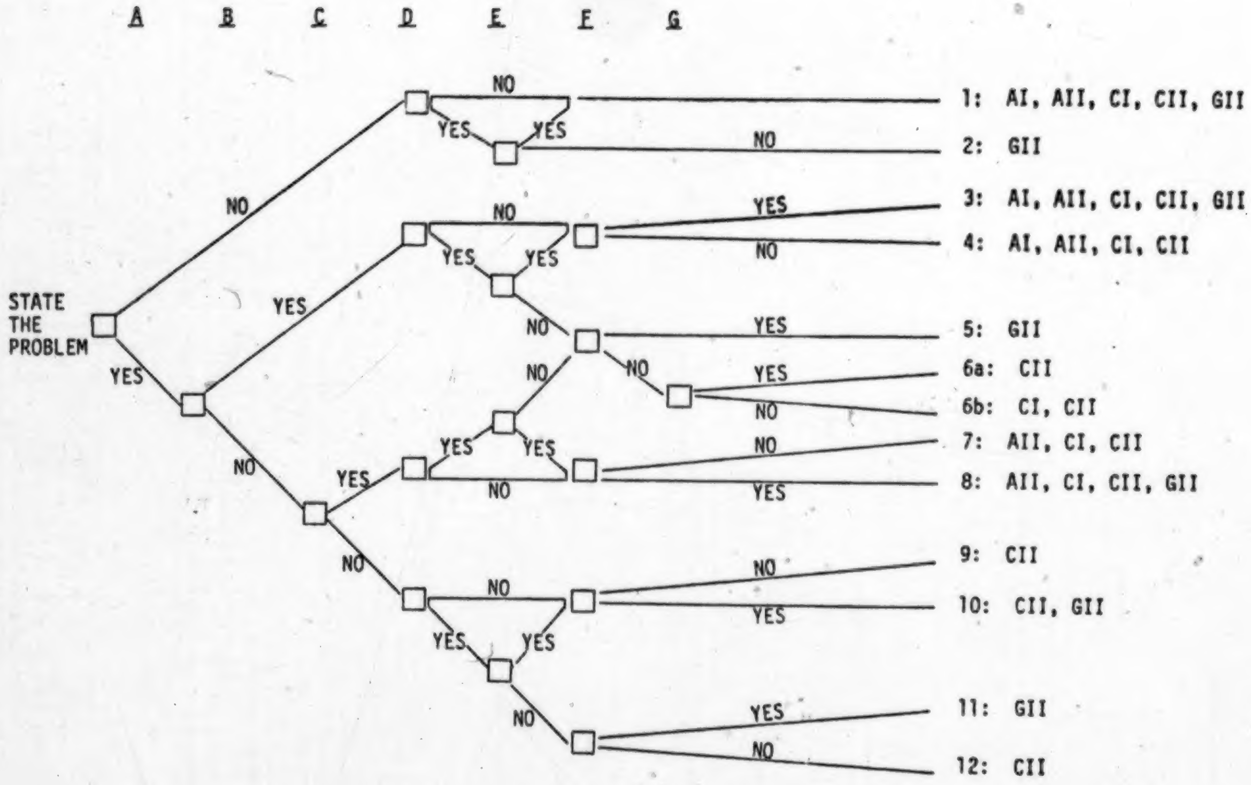

A
B
C
D
E
F
G
STATE THE PROBLEM
YES
NO
1: AI, AII, CI, CII, GII
2: GII
3: AI, AII, CI, CII, GII
4: AI, AII, CI, CII
5: GII
6a: CII
6b: CI, CII
7: AII, CI, CII
8: AII, CI, CII, GII
9: CII
10: CII, GII
11: GII
12: CII

Figure 2.1 The Situational Leadership Model of Vroom and Yetton

5. The Conflict Rule: If the acceptance of the decision is critical, an autocratic decision is not certain to be accepted and subordinates are likely to be in conflict or disagreement over the appropriate solution AI, AII and CI are eliminated from the feasible set.

6. The Fairness Rule: If the quality of the decision is unimportant, and if acceptance is critical and not certain to result from an autocratic decision AI, AII, CI and CII are eliminated from the feasible set.

7. The Acceptance Priority Rule: If acceptance is critical, not assured by an autocratic decision and if subordinates can be trusted, AI, AII, CI and CII are eliminated from the feasible set.

Application of these rules in a particular situation will result in a feasible set of one or more decision processes. If more than one process is left in the feasible set, the decision maker could apply other criteria such as time involved or personal preference to select a specific process.

A number of assumptions which are critical to its operation underlie the Vroom-Yetton model. In sections which follow, the literature relating to issues surrounding these assumptions is reviewed.

The Importance of Decision Making

Vroom and Yetton equate decision making with leadership. It may be argued that there are many other aspects of leadership behaviour which merit attention. However, in reviewing literature relevant to leadership, management and administration, strong support for decision making as the over-ridingly important function of those charged with the control of formal organizations is to be found. Simon (1945:1) stated: "The task of deciding pervades the entire administrative organization. . . ." This view is supported by Griffiths (1959:75) who suggested that: "Decision making is becoming generally recognized as the heart of organization and the process of administration." Simon (1960:1) asked:

> What part does decision making play in managing? I shall find it convenient to take mild liberties with the English language by using decision making as though it was synonymous with managing.

Mintzberg (1973:77) noted:

> Probably the most crucial part of the manager's work - the part that justifies his great authority and his powerful access to information - is that performed in his decisional roles.

Hall (1977:257) provided further support for the view. He stated: "One of the most critical activities of leaders is to engage in the decision making process." Examining the importance of decision making in the school setting Gregg (1957:275) noted: "Decision making is at the very heart of the administrative process," while Owens (1970:90) observed:

> Contemporary thinking about the nature of administration both within and out of education, places decision making in a central position. It may be that decision making is the core process of administration to which all other activities can be subordinated. Or it may be that administration and decision making are synonymous. However, a more generally accepted notion is that decision making is _the_ key function or activity of administrators.

There is thus quite substantial support for the view that decision making is the primary responsibility of those who control formal organizations. However, while all those quoted agree on the importance of decision making they variously attribute responsibility for it to administrators, managers and leaders. Much of this confusion arises from a debate which may be summarized in a claim by Kochen et al. (1975:283) that "Leadership requires voluntary acceptance by subordinates." Such acceptance does not necessarily exist in formal organizations and those who deem this an essential feature of leadership use management or administration to describe the process of control in formal organizations. Many writers, including Vroom and Yetton, do use the terms interchangeably.

Separation of Quality and Acceptance Requirements

One basic assumption of the Vroom-Yetton model is that overall decision effectiveness is a product of decision quality and subordinate acceptance. In the model these are treated as separate elements. Many writers would not agree with this position. Miles (1974:256) in describing the human resources model noted:

> In this model the manager does not share information, discuss departmental decisions or encourage self direction and self control merely to improve subordinate satisfaction and morale. Rather, the purpose of these practices is to improve the decision making and total performance efficiency of the organization.

Miles thus believed that decision quality, as well as subordinate satisfaction, may be increased through participation. This view was supported by research conducted by Heller (1971). Discussing the results arising from a questionnaire and structured interviews with 260 managers he noted (1971:94): "Both levels thought that participation was most useful for improving the technical quality of decisions."

It should be noted that this finding does not weaken the theoretical support for the Vroom-Yetton model. If participation increases the quality of decisions, as well as increasing subordinate commitment it may affect the choice made within the feasible set but does not invalidate the theoretical basis for the model. However, it should be noted that while Vroom and Yetton treat quality and acceptance as unrelated, there is no justification in their work for the view of Wynne and Hunsaker (1975:11) who in describing the model noted:

> Where more than one decision process is feasible, they are rank-ordered on (1) decreasing concern for quality of outcome and (2) increasing concern for acceptance of outcome.

Wynne and Hunsaker's claim that decision quality decreased with the increased involvement of subordinates was not contended by Vroom-Yetton, one of whose criteria for selection within the feasible set was based on time considerations.

Participation and Subordinate Acceptance

Though Vroom and Yetton (1973:11) cautioned ". . . that participation in decision making has consequences that vary from one situation to another," throughout their work there is both implicit and explicit acceptance of the proposition that increasingly influential involvement in the decision making process by subordinates leads to their increased acceptance of the decisions made, that is, that there is a direct relationship between the degree of subordinate involvement and acceptance. This view is apparent in the statement (1973:34), "The method used should maximize the probability of acceptance. . . . Under these circumstances AI, AII, CI and CII which create less acceptance or commitment than GII are eliminated from the feasible set."

As Yetton (1972:1) pointed out, "Participation in decision making is one of the most extensively researched dimensions of leadership behaviour." Rather than reviewing the whole of this literature it is proposed to look at the more specific case of participation in the school setting to test the validity of this assumption.

Much of the attention directed towards decision making in schools has focussed on the effects of participation in decision making on such factors as student achievement (MacKay, 1964; Geiss, Leonard, Madden and Denton, 1973; Berlinger, 1975 and Miskel, 1977) and teacher satisfaction and morale (MacKay, 1964; Schwartz, 1970; Miskel, 1977 and Hoy and

Miskel, 1978). For the most part the quoted research points to a direct relationship between participation and these other factors.

The view that subordinate participation in decision making is related to broader measures of organizational effectiveness has been expressed by Gregg (1957:278):

> Many advantages can accrue from staff participation in educational decision making. The quality of the decisions may be increased by a more thorough canvass of the alternatives and of their probable consequences. Understanding and acceptance of decisions and courses of action are fostered by staff participation. Participation helps the staff member to identify himself with institutional purposes and programs.

Support for this general view is provided by Stahl (1972) and Johansen (1965) who were reported by Yarborough (1977) to have found a strong link between teacher participation in decision making and curriculum innovation, Schwartz (1970) who reported increased teacher satisfaction as a result of increased participation in decision making, Plaxton and Bumbarger (1973) who reported increased non-leader commitment to decisions reached under consensus and Flynn (1976) who reported positive relationships between participation and perceived effectiveness in a high school staff of 70.

Some Reservations About Participation

While the evidence cited above is supportive of a positive relationship between subordinate participation and some aspect of effectiveness, a number of studies indicate that this correlation is contingent upon other factors. Bridges (1967:49), while voicing the opinion that "Of the myriad activities in which the principal engages, his conscious involvement of teachers in making decisions is one of the most crucial" also queried whether all staff members must be involved in every decision. Bridges used the zone of indifference concept expressed by Barnard (1938) to suggest that "For an individual to be interested in participation he must have not only some stake in the outcome but the capability of contributing to the decision affecting the outcome" (1967:52). Bridges however warned that consultation on issues in the zone of indifference, that is, in situations in which subordinates did not have stake and expertise, could lead to subordinate alienation. Bridges' contribution was an important one in that it queried the presumed linear relationship between participation and one or another aspect of effectiveness which had been suggested to administrators as necessary pre-conditions for effective involvement.

Further support for a contingent approach to subordinate participation was provided by Alutto and Belasco (1972:117) who cautioned:

> These findings suggest. . . that traditional assumptions about the consequences of decisional participation should be modified, particularly assumptions concerning the universal desirability of increased participation in decision making.

However, they did acknowledge the importance of participation and noted (1972:121) ". . . unfulfilled desires for participation in decision making provide the basis for much of the current militancy amongst professionals." Alutto and Belasco's study was an important one in that it pointed out that increased participation by subordinates was not to be seen as a universal method of securing subordinate commitment but that its value was conditional or contingent upon teachers' desires to be involved and their current state of involvement. This study which suggested that teachers may be classified as being decisionally deprived or under-involved in decision making, optimally involved or decisionally saturated pointed out (1972:124): "The study shows that for at least two segments of each organizational population, the introduction of shared decision making is not a viable administrative strategy." A further finding of the Alutto and Belasco study was that teachers who perceived themselves to be optimally involved in decision making showed no more organizational commitment than teachers categorized as either being decisionally deprived or decisionally saturated.

Plaxton and Bumbarger (1973) pointed out that subordinate commitment to decisions was dependent upon the constitutional arrangement under which the participative groups operated. Three decision processes or degrees of involvement were used. Under the centralist model, the leader consulted organizational members but made the final decision. In the parliamentary mode a voting procedure was used while in the consensus model, unanimity was sought. Subordinate commitment was least when the centralist model was used but this finding was reversed for leaders. Plaxton and Bumbarger (1973) investigated the time for each of these processes and found that the parliamentary mode was more demanding of time than the centralist mode while the time required for consensus decision making was even greater than that required under the parliamentary mode.

The proposal by Plaxton and Bumbarger that use of committee structures might provide a time saving mechanism enabling participation received testing in a study by Flynn (1976). He reported that initial attempts to introduce participation in school decision making were confusing, frustrating and time consuming. As an alternative a representative decision-making body was established. Staff members brought their problems to this body through their representatives. After two years, over 80 percent of the staff voted for continuance of the decision-making body. However, Flynn noted that since the decision-making body made staff meetings less necessary, there were growing feelings of isolation amongst staff members who were not members of the decision-making body.

Absher (1977) provided further information on desirable degrees of participation. He concluded that those who were optimally involved demonstrated highest morale. Those who were under-involved had lower morale than those over-involved although they had higher rapport with principals. If teachers' morale is important for organizational effectiveness, over-involvement appears to be preferable to under-involvement.

A study by Conway (1976) provided further support for the concept of participation being curvilinear with satisfaction. Conway used a questionnaire designed by Alutto and Belasco to establish the degree of desired and perceived involvement. The 166 teachers in this study reported schools as being consultative.

Whannel (1976) reported an Australian research and noted that of 181 teachers, 171 perceived themselves to be decisionally deprived. A majority of teachers expressed the wish to be involved in decisions regarding instructional policies and the introduction of new instructional methods. This desire would be consistent with Bridges' criteria of stake and expertise as factors influencing the desire for participation. It is of interest to note that in this study consultation was the most desired form of participation - a finding different from that reported in Plaxton and Bumbarger's study.

Guba and Bidwell (1972) claimed that it was congruence of expectations between teachers and principals on what the roles of each should be rather than the use of any specific decisional technique that related to effectiveness and satisfaction.

Knoop and O'Reilly (1977:3) reported a study in which teachers expressed "a strong preference for group involvement. . . favouring the parliamentarian and participant determining procedure." Knoop and O'Reilly also reported:

> The democratic-centralist procedure received the highest mean scores of all procedures. . . . Teachers preferred the principal to make the final decision, being satisfied to give advice, information and suggestions.

From this brief review it can be seen that, in recent years research, particularly in regard to educational institutions, has indicated that the success of involving subordinates in decision making is contingent upon factors associated with the situation in which the decision is to be made, upon the skills and knowledge of the subordinates and upon their desire to be involved.

Variability of Decision Styles

Heller (1973:193) asked:

> 1. Do individuals use different degrees of power-sharing in a variety of specified circumstances?
> 2. Do all managers vary their leadership style?
> 3. In making a variety of different decisions, do individuals use the full range of alternative leadership styles?
> 4. . . . If the answer to the first question is negative then there is no point in asking any of the others.

The answer to these questions is crucial also to any consideration of the Vroom-Yetton model, since its basic assumption is that managers can vary the decisional style they choose to use. The question of decisional style has received a good deal of attention in the more general context of leadership style. The work of Lewin, Lippitt and White (1939) was influential in this regard. They suggested that there were three basic leadership styles: autocratic, democratic and laissez faire. For many years this contention dominated the literature. Much of the leadership research was devoted to determining leader style which is described by Fiedler (1974:40) as ". . . a relatively enduring set of behaviors which is characteristic of the individual, regardless of the situation." If, in fact, leaders are driven by personality characteristics to use the same behaviours irrespective of the situation, then any model which requires them to choose or select an appropriate style is meaningless.

Heller and Yukl were among the writers who addressed this matter. They noted (1969:238): "The findings presented suggest that leaders vary their decision behavior according to the hierarchical focus of the problem." They also reported (1969:239): "The results of the present study support the thesis that the amount of influence a leader allows his subordinates changes with six of the seven situational variables studied in this research."

Heller (1971:195) reporting a major research concerning managerial decision making noted:

> There is an assumption of decision style uniformity in the literature which shows itself in the use of the conventional rating scales. However it seems likely that managers faced with the same problem in different circumstances will vary their decision style.

The ability of managers to vary their decision style is a critical factor in the utility of the Vroom-Yetton model. The main methodology used by them to test this proposition was to prepare 30 case studies which were derived from descriptions of decision situations provided by managers. The cases covered a wide variety of managerial situations. Yetton (1972:56) asked each of the 165 managers to:

> . . . put himself in the managerial role in each of the case studies and to indicate which of the five alternative managerial styles was closest to the procedure he would use to solve that problem.

Yetton, as a result of this research reported (1972:59):

> Of perhaps more interest is the fact that the problem main effect accounts for 28.3 percent of the total variance in behavior across the cases while the individual main effect accounts for only 9.7 percent. . . . This is a surprising finding, given the emphasis in the literature on individual characteristics both as determinants and as predictors of the level of participation.

Reporting the results of research using a similar methodology with a large number of managers (N = 385), Vroom and Yetton (1973:64) reported:

> The results show that 98.7 percent of the managers indicated that they employed each of the five decision processes some proportion of the time. Only five managers did not indicate some percentage for each. . . of these, three reported that they always used a single process. . . one that he used four processes. . . and one pointed out that he used only two of the five processes.

Noting that his results were obtained both through use of the standardized problem set devised by Yetton (1972) and recalled problems, Vroom (1974:58) observed:

> Perhaps the most striking finding is the weakening of the widespread view that participativeness is a general trait that individual managers exhibit in different amounts. To be sure there were differences among managers in their general tendencies to utilize participative methods as opposed to autocratic ones. . . .
>
> However these differences among managers were small in comparison with differences within managers. On the standardized problems, no manager indicated that he or she would use the same decision process on all problems or decisions and most managers use all methods in some circumstances. . . .

Research was undertaken by Hill and Hughes (1974) to determine if leaders could behave flexibly enough to cope with varied situations. The result of the research was a conclusion that leaders do vary their behaviour as tasks change. Hill and Hughes found that differences in the relative amounts of information which leaders and subordinates had regarding different situations was the key factor in determining the degree to which participative processes were employed.

House and Mitchell (1974) postulated four types of leader behaviour: directive, supportive, participative and achievement oriented. They claimed that all styles could be shown by the same leader and noted (1974:83) that ". . . the traditional method of characterizing a leader as either highly participative and supportive or highly directive is invalid." Similarly Stogdill (1974:9) noted: "These findings suggest that the behavior of the leader is not fixed in all circumstances. Rather the leader consciously or unconsciously changes behavior in response to changing situational demands."

While there is strong support for the proposition that managers' behaviours are not fixed, it should be realized that much of the research has focussed on what managers claim they would do in hypothetical situations. Much more convincing would be empirical evidence that in a variety of situations managers did use different styles.

Decision Process Taxonomies

The Vroom-Yetton model proposed that for group problems there were five decision processes or decision styles which represented important points on a continuum of subordinate influence on the decision process. These were defined in Figure 1.1. These processes or styles were designated S1 to S5 by Yetton (1972) but were given the symbols AI, AII, CI, CII and GII by Vroom and Yetton. The authors noted (1973:14):

> The letters in the code signify the basic properties of the process (A stands for autocratic; C for consultative; G for group and D for

> delegated). The roman numerals that follow the letter constitute variants on that process.

It should be noted, however, that there is no provision for delegation in group problems.

While these points are visualized as lying along a continuum of subordinate influence, Vroom and Yetton do not suggest that they are equally spaced. Using a technique suggested by Coombs (1964), values of zero and ten were arbitrarily assigned to processes AI and GII, these being seen as the polar points on the continuum. Scale values were then derived for the other processes. The resulting values were AI = 0, AII = 0.625, CI = 5.0, CII = 8.125 and GII = 10.

Alternative Decision Taxonomies

Many writers have proposed decision taxonomies alternative to that used by Vroom and Yetton. Gibb (1969:258) observed:

> Among the earliest studies of leadership style was that of Lippitt and White (1943) which defined styles as "autocratic," "democratic" and "laissez-faire." Apart from the latter about which there is considerable doubt, these terms have continued to be the most commonly employed to designate opposing poles of a style continuum.

The durability of this bi-polar view of decision styles can be gauged from its use by March and Simon (1958). They noted:

> Supervisory style may be ranged along a continuum: at one extreme decisions are made by the supervisor and communicated to workers without prior consultation; at another extreme, decisions are made on the basis of free and equal discussion.

Tannenbaum and Schmidt (1958:95) asked: "Should a leader be autocratic or democratic in dealing with his subordinates - or something in between?" They answered the question by positing a dual continuum of what they termed "boss centered leadership" and "subordinate centered leadership." Pictorially at least Tannenbaum and Schmidt showed the various processes as being equally spaced as shown in Figure 2.2.

Swanson (1959) pointed out the increasing importance of small groups as decision making bodies. He suggested that the constitutional arrangement under which a group operated was a critical factor in its effectiveness. Swanson defined constitutional arrangement (1959:48) as:

> the social definitions that state a group's sphere of competence and the proper procedures for making and executing decisions. . . . Constitutional arrangements may be formal or informal, explicit or implicit, clearly defined or vaguely sensed.

Swanson noted (1959:48):

> There are only a few common types of constitution in human affairs. . . . These three types of constitutional arrangement are the parliamentarian, the participant determining and the democratic centralist.

Analysis of the meanings that Swanson attached to each of these terms indicated a close parallel between participant determining and Vroom-Yetton's GII style and between the democratic-centralist and CII style. However, there is no parallel in the Vroom-Yetton model to the parliamentarian mode. Swanson explained that the parliamentary type of constitutional arrangement is one "in which decisions must be made by a membership whose interests are heterogeneous and often conflicting." He cited schools as being one of the types of organizations in which such constitutional arrangements might be anticipated.

Likert (1961:242) writing of participation in decision making noted:

> Participation should not be thought of as a single process or activity but as a whole range of processes and activities. It is even possible to describe participation tentatively as a continuum of processes. . . .

He proposed a 12 point scale which, for the most part assumed that

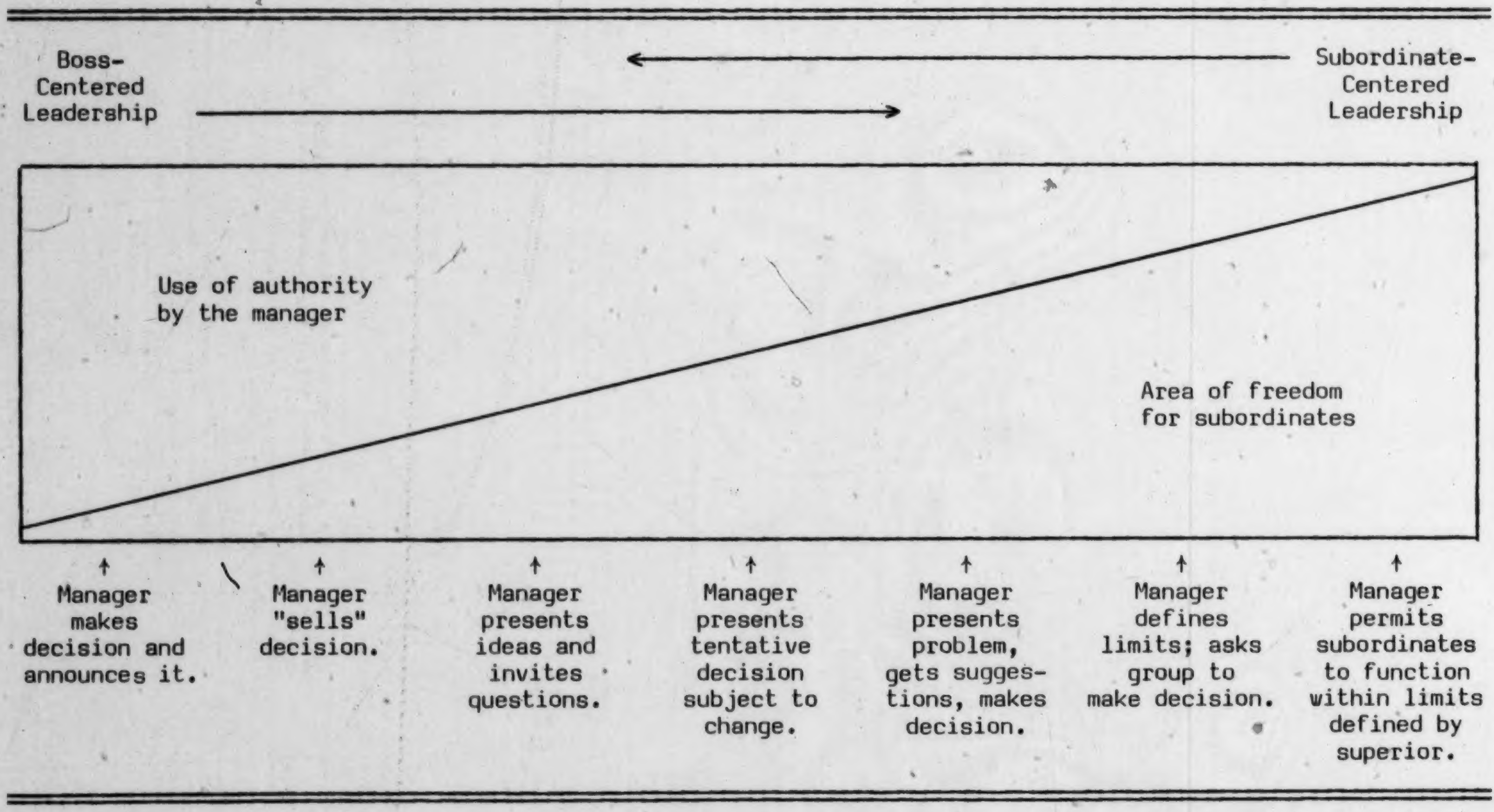

Boss-Centered Leadership
Subordinate-Centered Leadership
Use of authority by the manager
Area of freedom for subordinates
Manager makes decision and announces it.
Manager "sells" decision.
Manager presents ideas and invites questions.
Manager presents tentative decision subject to change.
Manager presents problem, gets suggestions, makes decision.
Manager defines limits; asks group to make decision.
Manager permits subordinates to function within limits defined by superior.

Figure 2.2 Leadership Behavior - Tannenbaum and Schmidt (1958)

decision making was for the purpose of changing organizations. Two variables appear to run through the proposed continuum: the phase of the process at which subordinates were enabled to take part and the role assigned to the subordinates. The end points of Likert's continuum, however, were similar to Vroom-Yetton's AI and GII. In a later publication (1967) Likert proposed a four point scale and proposed that the most participative of these was appropriate for use in all situations.

Strauss (1963) differentiated decisions according to whether they involved an individual or a group. His typology was based on who made the decision and who was involved in it. He suggested two major subtypes of decision made by the superordinate acting alone. In the first, the subordinate's desires were not considered, in the second the subordinate was not consulted but the superior took account of what he thought most subordinates would want. In Strauss's second category of group decisions, group meetings were seen as being appropriate but the superordinate retained the final word on the decision made. Strauss again suggested that this broad type of decision could be separated into two sub-types. In one the superior made it clear that he wanted little opposition from subordinates. In the second, though the superior retained final control, subordinate wishes were usually likely to be observed. In his final major category, corresponding to the participant determining process, Strauss again suggested that two sub-types could be differentiated. In the first the superordinate's wishes were made clear to subordinates, in the second the superordinate was seen to make little use of his influence. Strauss's typology was an interesting one since it went beyond the explicit action which was used to shape the decision and took account of subordinate perceptions of what the leader or manager expected them to do. Strauss (1963:59) noted:

> the formalities of consultation and delegation can easily cloud the basic realities of the influence process. Few superiors would make decisions without considering how their subordinates might react and even fewer subordinates would make decisions without considering possible reaction by their superior. . . . A boss who does not hold formal meetings with his subordinates may show more real consideration (and they may have more real influence) than the boss who holds frequent meetings in which he masterminds subordinates until they give him the decision he wants.

Bridges (1967) pointed out two considerations of which, he believed, account should be taken in deciding on the role of teachers in the decision making process. The first of these was concerned with the phase in the decision process at which involvement should take place. The second factor identified was the actual role to be occupied by the teacher. He suggested that teachers might participate as consultants, as advisors offering opinions or criticisms or as full participants sharing in the choice from the available alternatives. Bridges, like Swanson, saw the need for a parliamentarian procedure. Bridges acknowledged the time consuming nature of participant determining procedures and suggested that this method should only be used for the most important decisions.

Owens (1970) suggested five styles appropriate for group decision making: discussion, information seeking, democratic centralist, parliamentarian and participant determining.

Heller has been one of the most prolific and influential writers on decision making. In a series of publications, both individually and with others, he developed the concept of participation in decision making. He noted (1971:xv):

> The most widely used scales in current use assume a basic and

> simple shift between democratic and authoritarian methods of leadership and they use ill-defined positions in between the extremes. The scale used in this research is called IPC (Influence-Power Continuum) and uses five defined alternatives. . . . Unlike most scales in current use, the IPC does not suggest that any of the five alternative styles is better or worse than any other. . . .
>
> The five points on the influence-power continuum are as follows:
>
> Style 1 The leader makes his own decision alone
>
> Style 2 Having made his own decision alone the leader adopts a formal method of communicating the result
>
> Style 3 Prior consultation is used, but the decision rests entirely with the leader
>
> Style 4 The decision emerges as the result of joint boss-subordinate discussion in which both take an approximately equal share in the final determination
>
> Style 5 The leader delegates a decision to his subordinate.

In applying this influence-power continuum to group situations Heller, Drenth et al. (1977) briefly described six levels of increasing participation as (1) no information (2) information given (3) opportunity to give advice (4) advice considered (5) joint decision making and (6) complete control (delegation).

There appear to be two major differences between the group models proposed by Vroom-Yetton and Heller. The first relates to Style 2. Vroom-Yetton described this as involving the collection of information without explaining the purpose for which it was collected. Heller saw it as being a formal announcement of an authoritatively made decision. According to Heller the decision was shared with subordinates but they had no influence on the decision. Vroom-Yetton's style AII not only precluded the subordinate from influence but did not allow for sharing or understanding of the decision. For this reason it may be seen as being less participative than Heller's Style 2. The second difference concerns the respective views regarding the most participative process. In the Vroom-Yetton typology, consensus, which is defined as unanimity, is the polar position. Heller saw delegation or "complete control" as being more participative. In an earlier version of the Vroom-Yetton model, ten decision rules were used instead of the present seven. One of these was the group problem rule which stated (Vroom and Jago, 1974:749):

> If a problem has approximately equal effects on each of a number of subordinates (i.e. is a group problem) the decision process should provide them with equal opportunities to influence that decision. Use of a decision process such as GI or DI (delegative) which provides opportunities for only one of the affected subordinates to influence that decision may in the short run produce feelings of inequity reflected in lessened commitment to the decision on the part of those "left out" of the decision process and, in the long run, be a source of conflict and divisiveness.

This rule thus proscribed the use of a delegative process for group problems. Given the assumptions of the model in regard to the importance of subordinate acceptance, this decision was logically consistent. Heller and Yukl (1969:230) noted that in joint decision making: ". . . some determination of the majority position is made. Although the manager may occasionally over-rule the majority, more often than not the majority view is accepted." Writing in 1977, Heller et al. equated joint decision making with one man, one vote, i.e. with the parliamentary mode. In view of what appear to be highly significant differences between the typologies of Vroom-Yetton and Heller, it is surprising that Heller and Clark (1976) noted: "Another researcher (Heller, 1971) used five decision styles almost identical to Vroom's but with a different set of contingencies. . . ."

Bass (1975:729) posited five decision styles: directive, negotiative, consultative, participative and delegative. Bass cited research indicating that ". . . although empirically correlated the five style variables were generally conceptually independent."

Knoop and O'Reilly (1977) reported a research conducted in

Canadian secondary schools which offered six procedural choices. Two of these choices were authoritarian modes involving either the principal or subject department chairman as sole decision maker. The third choice was the teacher as sole decision maker. This mode was not considered to be appropriate in a taxonomy of administrative decision making. Knoop and O'Reilly's other three categories were the democratic centralist, parliamentarian and participant determining. The latter term was equated with consensus. While no definition of consensus was given, acceptance by all rather than unanimous support may be inferred from the context.

Four styles were suggested by Castore (1978): benevolent dictatorship, majority rule with formal voting, discussion to majority consensus and unanimity.

Analysis of the alternative taxonomies of decision processes from the major references cited, makes it clear that, while there are parallels for Vroom-Yetton's AI, CI, CII and GII styles, there are two major areas of disagreement with other taxonomies. No other taxonomy has an AII style. The style which appears closest is that of providing formal notice of an autocratic decision which is shared by Tannenbaum and Schmidt, Likert, Heller and Bass. However, this is a qualitatively different activity to seeking information without explaining the purpose for which the information is required.

The second major difference concerns the use of the parliamentary style. This style was proposed by Swanson, Bridges, Owens, Heller (though the term he used was joint decision making), Knoop and O'Reilly and Castore.

One further issue concerning the taxonomy relates to the consensus style proposed by Vroom-Yetton. Their definition required (1973: 13): ". . . the support of the entire group" or unanimity. Hall (1977:75) discussing consensus noted: "Complete unanimity is not the goal, in fact, it is rarely achieved. But each individual should be able to accept the decision on the basis of logic and rationality." This comment suggests that a modified consensus style which seeks to obtain at least acceptance and a willingness to go along with the decision is a necessary process to include in a comprehensive taxonomy. Heller too had grave doubts about the consensus mode. He reported a study (1971:98) involving 260 managers and noted:

> The discussions showed that managers of both levels in this sample did not believe that there was anything to be gained from achieving consensus decisions. Subordinates usually, but not always liked to be involved in I-P (influence-power) sharing but expected their chiefs to take the responsibility for the final decision. Nor would they think highly of a boss who deferred to their wishes too often.

All of the writers in the foregoing section have attempted to identify decision processes along a continuum of subordinate influence. In most cases, either implicitly or explicitly they have assumed the points they have identified as being equally spaced along this continuum. Vroom-Yetton are the only ones to have attempted to quantify an unequal spacing. Table 2.1 attempts to summarize what appear to be the most important of the alternative taxonomies discussed.

Decision Process and Explicitness

One further issue concerning choice of decision process had been raised by Owens (1970) who stressed the need for a school staff to be informed in advance of the decision process which was to be used. He suggested that if, for example, a principal used a consultative process

Table 2.1

Decision Processes For Group Problems Proposed By Various Writers

VROOM-YETTON	LEWIN, LIPPITT & WHITE	TANNENBAUM & SCHMIDT	SWANSON	HELLER & YUKL	STRAUSS	LIKERT	OWENS
A I Autocratic	Autocratic	Manager decides and announces	Autocratic	Manager decides--no explanation	Manager decides--no consideration	Exploitive-authoritative (System 1)	Discussion
AII Autocratic	Democratic	Manager decides and sells	Democratic-centralist	Manager decides and explains	Manager decides--consideration for members' views	Benevolent-authoritative (System 2)	Information Seeking
C I Consulte-tive		Manager presents-invites questions	Parliamentarian	Consultation	Consultation--Manager's preference clear	Consultative (System 3)	Democratic-centralist
CII Consulte-tive		Manager seeks suggestions	Participant-determining	Joint decision making (voting)	Consultation--Wishes observed	Participative (System 4)	Parliamentarian
GII Group		Manager defines limits for group		Delegation	Group decision--manager influential		Participant-determining
		Manager acts as group member			Group decision--manager as group member		

without explaining that he was reserving the right to make the final decision, then disillusionment could follow if the staff's advice was not taken.

Morphet et al. (1974:148) writing specifically about decision making in schools supported this view. They noted:

> Participation in decision making by all groups is now being widely advocated. As groups participate in decision making, it is vital that the limits of authority of each group should be clearly defined. The administrator-leader must also make clear to groups and individuals participating in decision making the decisions that he reserves for executive decision making and the decisions which he can share. To do otherwise would result in chaos.

Situational Factors

Vroom and Yetton have identified seven situational factors which they consider to be important in influencing a manager's choice of a decision process. A number of other writers have also addressed the question, and a brief review of literature in this area will,therefore, be undertaken. There is no unanimity among the writers. Though Vroom and Yetton originally suggested seven factors, in a recent article (1978: 148) they suggested: "A simple extension of the existing model would involve the search for additional situational variables." Vroom and Yetton have also suggested:

> If the studies mentioned above prove successful, their outcome will undoubtedly be a very much more complex theory about the social structure of decision making, each part of which would account for a small proportion of the variance in a manager's decision behavior.

One of the earliest references to situational factors was made by Vroom (1959). His study indicated that the effects of participation on an individual varied with the personality structure of the follower. Vroom (1959:326) noted:

> The results suggest that an adequate theoretical explanation of the effects of participation in decision making should include a consideration of the influence of personality variables that interact with participation. The present study also gives general support to a situational theory of leadership and indicates the possible value in simultaneous examination of environmental and personality variables.

Perhaps a question in the Vroom-Yetton model which takes account of this factor is: "If I were to make the decision myself, am I reasonably certain that it would be accepted by my subordinates?"

Strauss (1963) used the term power allocation in the sense that Vroom and Yetton used decision process. Strauss was less confident than Vroom and Yetton about the effects of participation and indicated that decisions regarding power allocation needed to take account also of the personality, background and expectations of employees, the technology being employed and the costs - both direct and indirect - of participation, consultation and delegation.

Blankenship and Miles (1968:106) reported a study in which: "The association between hierarchical position, organization size, and span of control and five dimensions of managerial decision behavior. . . is examined for 190 managers in eight different companies." Hierarchical position was found to be the most significant influence on the manager's choice of a decision style. There was some evidence that the size of the organization and the manager's span of control were also significant.

Kelley and Thibaut (1969) suggested that the nature of the problem was a significant consideration. They noted (1969:61):

> The relative proficiency of groups in problem solving as compared with individuals depends on characteristics of the problem undertaken. . . . However. . . we can begin to identify the problems on which groups are highly proficient and those on which they are most incompetent.

If this is the case it would appear that a model which attempts to specify a decision process should make provision for types of problems which appear to be more susceptible to group solution rather than solution by individuals or vice versa.

Group size and structure were suggested by Maier and Hayes (1970:331) as being the most important influences in decision making. They suggested that:

> If the group is small, cohesive and skilled in group problem solving, differences are usually resolved through consensus. If the group is large and loosely structured, differences may be resolved by majority rule.

A comprehensive investigation into participation, managerial decision making and the influence of situational variables was undertaken by Heller and Yukl (1969). They found:

(1) that leaders at different hierarchical levels exhibited significantly different degrees of decision centralization;

(2) that functional specialization was related to the style of decision making, e.g., production managers tended to use centralized styles whereas personnel managers tended to lower centralization;

(3) that increased span of control was associated with more centralized procedures;

(4) for lower level managers, centralization increased with length of time in the job, while for higher level managers the opposite effect was observed; and,

(5) that in matters affecting their immediate subordinates managers tended to use centralized methods whereas in decisions involving persons more than one step removed in the hierarchy less centralized methods were used.

A study in which 130 senior managers and their immediate subordinates were involved was reported by Heller (1971). This study supported the findings reported in Heller and Yukl (1969). Additionally significant differences in the degree of decision centralization according to the importance of the decision to the organization were observed. Heller reported (1971:xvii):

> Where a decision is important to the company, Styles 1 and 2 predominate and little influence is shared. However, where a decision is important for a subordinate Styles 3, 4 and 5 (more participative styles) predominate, giving him a wide measure of influence.

The senior manager's perception of the skill differences between himself and his subordinate also were related to centralization. Where these differences were perceived to be large, the tendency was toward more centralized decision styles.

Mulder and Wilke (1970) questioned Strauss's view that participation necessarily led to power equalization. They pointed out that participation allowed subordinates to contribute but that the nature and degree of involvement was dependent upon the relative amounts of expert power possessed by the leader and the subordinate. They noted (1970: 446): "It also seems realistic to accept the fact that effective participation requires certain skills and types of knowledge which are unevenly distributed."

Wofford (1971:10) sought to provide ". . . a systematic conceptualization of situational variance as it might relate to leadership behavior." Wofford suggested five situational variables: the degree of centralization, organizational complexity, size and structure of the organization, group structure and organizational layering and communication. As a result of this research Wofford (1971:16) concluded:

> The results indicate that it is possible to establish a conceptual framework to include situational variables and managerial behavior

> dimensions and to refute the position of theorists who contend that the study of managerial behavior is futile because situational effects negate behavioral effects.

It should be observed that Vroom and Yetton do not make this claim but have pointed out that the influence of situational variables is significantly greater than the influence of personal variables.

Personal characteristics of subordinates and such environmental factors as subordinate tasks, the formal authority system and the nature of the primary work group were suggested by House and Mitchell (1974) as contingency variables which had implications for a leader's choice of decision style from among the four posited by them.

Miner (1975:199) noted that managers cannot meaningfully share decisions with those who do not have information and observed: "Thus both senior manager and subordinate may perceive decision sharing where indeed the decision has already been fore-ordained by the perceived expertise of the superior." Miner thus joined a number of others who believed that the relative amounts of information and expertise between superordinate and subordinate were critical considerations in deciding upon an appropriate decision style.

Hersey and Blanchard (1977) noted that: "Successful leaders are those who can adapt their behavior to meet the demands of their own unique situation." They developed a theory which required a leader to select a decision style depending upon the maturity of the subordinate. Four styles - telling, selling, participating and delegating - were proposed. Mature subordinates whose needs for both task support and relationship support were low were believed to be most appropriately involved through delegation. Those subordinates exhibiting low maturity, i.e., those needing a great deal of both task and relationship support, were believed to necessitate a "telling" or autocratic style. Subordinate maturity was the independent variable in this formulation and Hersey and Blanchard saw this as being a product of goal-setting ability, willingness and ability to take responsibility and experience and/or education.

Heller and Clarke (1976) pointed to the importance of the skill or expertise of subordinates in deciding upon an appropriate decision process.

Heller et al. (1977) suggested that situational contingencies were of four types. The first was concerned with personal characteristics of the subordinate, the second with the particular nature of the task to be undertaken, the third with the small group in which work took place and the final factor was the nature of the organization as a whole including such elements as total size and the degree of environmental uncertainty. In this study, Heller's six group decision styles were treated as independent variables, the above contingency factors were seen as moderating or intervening variables and effectiveness, skill use and subordinate satisfaction were the dependent variables.

Four types of decision process were posited by Hoy and Miskel (1978). They suggested that in deciding upon an appropriate decision process, managers should take account of two situational factors:the subordinate's personal stake in the decision and his level of expertise. Where these were high, managers were advised to use participative methods. The relative values of consensus and parliamentarian methods as devices for enabling participation were discussed and the view was expressed that the latter was likely to be used most frequently.

Dachler (1978) like Heller (1971) drew attention to the perceived importance of the decision as a situational factor considered by managers in choosing an appropriate decision style. Heller suggested that where the decision was seen as being of major importance, managers tended not to share influence with their subordinates. Dachler concurred with this view.

Unlike other writers and researchers reviewed in this section, Fiedler (1978) believed that leadership style, and to some extent, leader behaviour, tended to remain fairly constant, though the situations in which leaders operate change. The major element of change in Fiedler's model is situation favourableness. He noted (1978:122):

> The amount of time which will elapse before a leadership situation will change. . . will depend on the degree of structure and complexity of the task and the intellectual abilities of the personnel who are available for these positions. For such tasks as infantry squad leaders the time at which this occurs may be four or five months; for school principals it appears to be between two and three years.

It seems possible that in two or three years several of the situational variables cited by Vroom and Yetton might change. After such a period it is likely that staff members would have developed expectations about the types of decision which the leader habitually shared with them and those in which he reserved the decision to himself. This knowledge has implications for the prior probability rule. After such a period it is also likely that the manager would be in a better position to assess whether or not staff members shared organizational goals and to have more accurate perceptions of whether or not conflict was likely in a novel situation. This proposal received some support from Heller (1971:87) who reported a relationship between a manager's experience in the job and his tendency to use a decision style which gave ". . . subordinates a moderate amount of potential influence."

Heller proposed five groups of contingency variables. He noted (1973:191):

> Each group of variables has a certain theoretical homogeneity in that they form a system of relationships. . . . Elsewhere I have indicated that international research on decision making and power equalization has evolved to the point where nearly all of the variables. . . with the exception of the Omega group have now been at least roughly measured.

As a summary device, Table 2.2 uses Heller's suggested groups of variables and indicates other researchers who have suggested similar situational variables. The listing is by no means exhaustive but indicates support for the Heller categorization. Three additional categories are also used. These deal with further groups of variables which emerged as a result of the literature review. The first of these deals with the nature of the problem to be solved and those who have considered this a significant factor are identified.

A second category deals with the characteristics of the subordinate and the third with the nature of the interaction between the leader and the subordinates. This table as a whole suggests some situational variables, additional to those suggested by Vroom and Yetton, which might be investigated as part of this study.

CHARACTERISTICS OF SCHOOL DECISION MAKING

The Vroom-Yetton model was developed as a general model for use in all hierarchically structured organizations and for all types of decisions. It may be claimed however that in schools, the making of decisions is somewhat different from that which occurs in the industrial and commercial organizations upon which much of the development of the model was based. This section will examine this claim.

Table 2.2

Contingency Variables Relevant in Decision Making Research

(based on Heller, 1973)

Group	Contingency Variables	Other Researchers
ALPHA	Characteristics of the manager: age, experience, skills attitudes, values	Heller and Yukl - Time in job Fiedler (1978) - Intellectual abilities Mulder - Manager's expertness
BETA	Immediate situation variables: technology, job function, organizational level, etc.	Heller (1971) - Task structure Strauss (1963) - Technology Fiedler (1967) - Task structure
GAMMA	Micro-structural variables: span of control, hierarchical levels, size of department, etc.	Blankenship and Miles - Hierarchical position, size, span of control Maier and Hayes - Group size and structure Heller and Yukl - Hierarchy, span of control
DELTA	Macro-structural variables: size of organization, relationships with other department, workflow technology, etc.	Wofford - Centralization, size, structure
	Variables regarding the nature of the question to be resolved	Bridges - Information and expertise Heller and Dachler - Importance

Table 2.2

(Cont'd.)

Group	Contingency Variables	Other Researchers
	(continued....)	Heller (1971) - Importance Kelley and Thibaut - Nature of question Heller and Yukl - Involving immediate subordinate or others
	Variables regarding the nature of the subordinate	Vroom (1959) - Personality Vroom and Yetton - Prior probability of acceptance, acceptance of org. goals Strauss - Subordinate expectations and subordinate personality Mulder - Expectations and knowledge
	Variables concerned with the interaction of superior and subordinate	Fiedler - Effective leader-member relations Hersey and Blanchard - Degree of support required from leader Heller (1977) - Group climate

Schools as Human Service Organizations

Part of the difference referred to above arises from the fact that schools are what have been described as human service organizations. Hasenfeld and English (1974) identified a number of characteristics which they believed differentiated these organizations from most others. The first characteristic was that goal definitions in human service organizations are problematical and ambiguous. Much of the traditional theory of decision making developed by such writers as Simon (1945, 1960) has implied that decision making consists of finding the solution to an identified problem in order to reach a goal which is clear and agreed. The second characteristic identified by Hasenfeld and English is that the technology of human service organizations is indeterminate and as a result there is no certainty about what will happen if changes to the technology being used are made. This again conflicts with rational decision theory which assumes that alternative courses of action can be identified and the consequences of choosing a particular alternative determined. The third characteristic identified is that human service organizations rely on professional staff. In dealing with such staff it is not unusual for conflicts to arise around the questions of organizational authority and professional autonomy. Thompson (1960:497) in discussing the assumptions underlying leadership observed: "It is assumed that the superior at any point in the hierarchy is able to tell his subordinates what to do and guide them in doing it." Such an assumption cannot be made in human service organizations generally or schools specifically. Hasenfeld and English's fourth characteristic is that human service organizations lack valid and reliable measures of effectiveness. Traditional decision theory assumed that choice was made by selecting the alternative for which expected utility was greatest. If an organization has indeterminate goals and uncertain measures of effectiveness, the making of a choice between alternatives cannot be evaluated in the way required in the traditional model. However, in many of the commercial and industrial organizations in which the Vroom-Yetton model was developed goals and technology might be expected to be much clearer and some problems in implementing the model in a setting different from that for which it was designed may be anticipated.

Further Considerations in School Decision Making

There are a number of other factors which may have implications for decision making in schools generally and for this study in particular. March (1974:24) drew attention to the first of these when he noted that ". . . participation in the organization is fluid." Fluid participation is described by March in the following terms:

> Participants come and go. Students, teachers and administrators move in and out. Parents are erratic in their involvement. Community leaders sometimes ignore the schools, sometimes devote considerable time to them.

This characteristic is not typical of the organizations for which the Vroom-Yetton model was developed and might be expected to have implications for the use of the model in the school setting, particularly as many decisions which have very important implications for teachers must be made before some of them are appointed to the staff.

A second characteristic is that the principal as a middle manager must attempt to satisfy superordinates, subordinates, students and parents. It is to be expected that there will usually be substantial agreement between all parties particularly in respect of established routines. However, it would also be expected that in making changes, the likely reaction of all must be gauged by the principal and he is not free to make whatever decision he chooses. In this respect the school situation differs from the situation implicitly assumed by Vroom and Yetton when they postulated that the overall effectiveness of a decision was the outcome only of decision quality and subordinate acceptance. In some cases it was to be expected that the principal would have difficulty in reconciling the wishes of his superordinates and his subordinates and in some cases the other parties with whom he was engaged. He is, therefore, in a position where conflicting pressures are likely to exist, and his choice of a decision process must take account of this.

Though it is not stated specifically, there is an assumption in many of the cases detailed by Yetton (1972) that decision making consists essentially of problem solving. Streufert (1978:218) distinguished between problem solving and decision making in the following terms:

> In problem solving situations a (usually single) correct solution to a problem must be found. In a decision making situation there is no correct solution. Rather the task force must explore the potential alternatives and select a course of action according to their own frame of reference.

In many of the situations faced in schools there is no single correct solution. Instead, there is the need for comparison of a number of possibilities all of which have costs and benefits. The decision must weigh these alternatives and choose between them. Duignan (1979), in a study of school superintendents, pointed to another possibility. Many superintendents when faced with decision situations either postponed them (11.1 percent) or set up mechanisms such as appointing committees, delegating responsibility or arranging meetings which made an immediate decision unnecessary. Similar actions might be expected by principals.

If all of the factors discussed above do operate on school decision making, it might be seen as operating in a context of considerable uncertainty. This is not to suggest that in schools there are not a large number of what March and Simon (1958:142) described as routinized situations where ". . . the degree of choice has been simplified by the development of a fixed response to defined stimuli," but that there will be large number of decisions in which there will be uncertainty about goals, about the technology for achieving these and about the success of the outcomes. Further, it seemed likely that these were the decisions situations which were those most likely to be shared by principals with the investigator.

Castore (1978:269) suggested that decisions may be classified into four types according to the type of judgement context within which they were made as indicated in Table 2.3. Castore pointed out that in Cells I and II, ". . . a correct answer is either definable in an actuarial sense, or is knowable within a relatively short period of time." He noted, however, that in Cells III and IV, ". . . preference judgements are based primarily on affective reactions." Castore pointed out (1978: 270):

> . . . it is also apparent that most of the research on group decision making. . . has been conducted in. . . Cell II and to a lesser extent of Cell I. Conversely findings recently reported by Vroom and Yetton (1973) indicate that many of the decision situations faced by upper level managers, and from these managers reports their most difficult decisions, are more typical of those found in Cells III and IV.

Table 2.3

Examples of Decisions in Four Types of Judgement Contexts

	Type of Judgemental Response	
	Statement of Preference	Description of Alternatives
Criterion Present	Selection of subordinates. Promotions. (Cell I)	Medical diagnosis. Weather forecast. (Cell II)
Criterion Absent	Political candidate selection. Decision to publish book. (Cell III)	Predicting energy needs for 30 years. Interpreting photos of Mars. (Cell IV)

(Castore, 1978)

Given the uncertainties attaching to school decision making it is to be expected that many decisions will fall into Cell III. Castore noted (1978:271) that in attempting to agree on a preference judgement in the absence of criteria (Cell III), ". . . the focus of the decision process is or should be on reaching a group decision which is maximally representative of group preferences." He went on to discuss how this might be done and, in reporting the results of a number of studies, noted (1978:271):

> Finally the participants in these studies were generally willing to put more money or effort into the implementation of their groups' decisions when (a) They were members of the majority faction within the group (b) the groups had initially high goal agreement and (c) the decisions were made by majoritarian procedures rather than by unanimity or autocratic procedures.

If, in fact, many of the decisions in schools are of the type categorized as Cell III then the absence of a voting procedure in the Vroom-Yetton model could be a quite serious weakness.

A further characteristic of schools, particularly elementary schools, is their flat hierarchical structure. In many business enterprises there is a pyramidal structure and the senior manager deals with only a few subordinates. In schools the principal tends to have extensive contact with a large number of subordinates. This allows frequent consultation but makes the arrangement of group decision making difficult because, for many decisions, the relevant group is the whole staff and use of group procedures would thus involve many staff members.

One further particular feature of the Vroom-Yetton model with implications for school decision making is that relating to information. The model assumes that if the leader does not possess the necessary information, consultation with subordinates should take place. While in most cases this would be expected to improve the information base and thus make possible improvements in the quality of decisions, there are two situations where this may not be so. In the first the principal is required to make decisions in the absence of information or where the information can only be gained from superordinates. The model, as it is presently stated, does not make provision for this. Secondly, there are many school situations where there is a great deal of information but much of it is conflicting as for example the benefits of homogeneous as compared with heterogeneous grouping. In such cases the evidence is so ambiguous that additional information does not guarantee the making of a more rational decision.

Another factor with particular application for this study concerns decision load. Because the decision situations were collected during the time when a large number of important decisions were being made it was to be expected that principals were under a relatively heavy decision load. Suedfeld (1978:209) pointed out:

> Decision making under high load tends to become stereotyped, characterized by the reduction of information search, the selective use of information and increasingly stimulus bound reactions.

CONCLUSIONS

Arising from the review of the literature a number of conclusions may be stated. However, a number of issues have also emerged about which there appears to be little agreement.

Among the conclusions about which some finality has been reached are the following:

1) that decision making is an important function of administrators, managers and/or leaders;
2) that under certain circumstances subordinate participation in decision making contributes to the overall effectiveness of organizations;
3) that all teachers do not perceive themselves to be optimally involved in decision making;
4) that there are different degrees of subordinate participation reflected in the use of different decision styles;
5) that there are a number of different typologies of decision style most of which are based on the concept of a continuum of subordinate influence on the decision process; and,
6) that situational factors are considered to be of significance

in determining an appropriate decision style.

Some of the issues about which there appears to be ambivalence are identified below:

(1) Does the involvement of subordinates in the decision making process affect decision quality as well as subordinate acceptance?

(2) Is there a linear relationship between perceived involvement and subordinate satisfaction or is this relationship dependent upon other factors?

(3) Do school principals use a variety of decision styles as has been suggested by some writers or do they have a prevailing style irrespective of situational factors?

(4) Is a parliamentary or voting style extensively used in schools as a decision making process?

(5) What is the distribution of decisions among the four categories suggested by Castore? The answer to this question will both give an indication of the uncertainty of school decision making and indicate the need for a voting style.

(6) If a voting style is used do principals feel obliged to implement the majority wish?

(7) Are there significant differences in the decision styles used in schools having different structural characteristics? Some characteristics which the literature indicates might be significant are school size and the length of time the principal has been in the school.

(8) Do principals take account of the importance of the decision in deciding upon an appropriate decision style?

(9) To what extent are teachers satisfied with their present levels of involvement in administrative decision making?

(10) Are different degrees of teacher satisfaction with their involvement in decision making associated with personal characteristics or characteristics of the schools in which they work?

(11) Is there a tendency for school principals to use a single style for problems of similar types?

(12) Is the decision style which the teacher perceives to be used in making the decision associated with teachers' perceptions of decision success?

(13) Does making the decision process to be used explicit have any relationship with the success of decision outcomes?

The chapter which follows will outline how the present study was designed to contribute to the formulation of answers to these questions.

Chapter 3

THE METHODOLOGY OF THE STUDY

The purposes of this chapter are to outline the methodology of the study, to deal with literature relating to specific methodological considerations, to consider the statistical requirements and limitations involved, to describe the sample and to state the hypotheses which are to be tested.

TESTING THE MODEL

As was stated in Chapter 1, the purpose of the study was to investigate administrative decision making in schools and particularly to test, in the school setting, the validity and utility of the Vroom-Yetton model. It is possible that the model is valid without it being of substantial utility. This could happen if, for example, an equally successful result could be achieved with a more parsimonious model or it could occur if implementation of the model was dependent upon an unacceptable level of change in school decision making practices. As an example of this latter possibility, it could be that use of the model involved a greater degree of consultation than previously existed. Principals could decide that an improvement in decision effectiveness, particularly if this was marginal, did not justify the additional time and might choose not to follow the model even though it was valid. This need to assess utility as well as validity required investigation of present practices in school decision making as well as investigation into the validity of the model.

Validity of the Model

The term validity is usually used in association with testing. Isaac and Mitchell (1971:83) noted: "Validity information indicates the degree to which the test is capable of achieving certain aims." The voluminous literature centred around validity tends to concentrate on this contextual background.

Vroom and Jago, however, used the term in relation to the Vroom-Yetton model of decision making. They noted (1978:151): "An empirical evaluation of the validity of the Vroom-Yetton contingency model of leadership is reported." They elaborated by reporting that: "Its (the model's) concurrent validity was greater than that of a non-contingent model proposed by other theorists." The meaning which these writers attached to the term became clear in the context. By validity they referred to their finding that decisions made using the decision process prescribed by applying the situational characteristics specified in the model were more likely to lead to decisions which were considered successful than was the case where the prescriptions had not been observed. Of the 181 situations analyzed by them, 117 were consistent with the feasible set and of these, 80 were considered to have been successful. Of the 64 decisions not consistent with the feasible set, however, only 14 were considered successful. Respondents had been asked to rate the effectiveness of decisions on a seven point scale. The decisions which were consistent with the feasible set had a mean of 5.39 while those which were inconsistent had a mean of only 3.11. In this study the same meaning will be attached to the term validity, that is, the degree to which conformance with decision process prescribed by the model leads to the making of decisions which are deemed successful.

There are difficulties in using this methodology since as Yetton and Vroom (1978:143) pointed out:

> However the major factor is probably that the choice of the right style does not guarantee that it would be effectively carried through. For example, in a number of instances Yetton (1976) found that while subordinates may have agreed with their manager that he had used a group consultative approach, they commented on their questionnaire that the meeting had been poorly run. Equally, failure to act in line with the model does not preclude a manager from acting in other ways to save a poor decision from failing. Such behaviors could lead to results which would appear to contradict the Vroom-Yetton model but which are, in fact, independent of its validity.

There is a further difficulty where subordinates estimates of decision outcomes are involved. If an unpopular decision must be made there is a likelihood that it will receive a low rating of success even though it may have been the best decision possible in the circumstances.

Despite these considerations the method does allow testing of the validity of the model in actual use. Given these limitations, however, it could not be expected that there would be perfect correspondence between decision success and the prescriptions of the model irrespective of its validity in optimal circumstances. As Vroom and Yetton (1973:57) pointed out, ". . . the reader should be prepared for the fact that the issues surrounding the evaluation of normative or prescriptive models are complex, and the methodology for answering questions of validity through empirical research is not well developed." What was done in the present study was to compare the success of decisions that were consistent with the model with the success of those that were not and to determine whether any differences were likely to have occurred by chance.

Concurrent and Predictive Validity

Vroom and Jago (1978:160) noted: "To borrow from the language of test validation, we have demonstrated concurrent validity for the model rather than predictive validity." By this was meant that when the model's prescriptions were checked retrospectively, an acceptable degree of correspondence between agreement with the feasible set and decision success was established. The procedure used required respondents to recall the problem and their perceptions of the situational attributes as they were at the time the decision was made. Vroom and Jago (1978:160), however, noted: ". . . the codings by managers of problem attributes may change with knowledge of the success or failure of the decision." Thus while there was evidence indicating validity, the possibility of biased recollections by decision makers prevented confident assertion of the model's validity to predict correct decision processes in advance of the event.

The separation of concurrent and predictive validity by Vroom and Jago raises consideration of the importance of this distinction. Kerlinger (1967:447) noted: "Predictive validity and concurrent validity are much alike. With few exceptions they can be considered the same, because they differ only in the time dimension." Isaac and Mitchell (1971:82) claimed that there were three types of validity: content validity, criterion related validity and construct validity. In a note they observed that criterion related validity was "Formerly, Concurrent Validity and Predictive Validity." In view of these indications that there is relatively little difference between concurrent and predictive validity it is not proposed to distinguish between these terms but rather to address the specific issue raised by Vroom and Jago. Their concern arose from the fact that recall of cases after the event could lead to errors in coding the situational attributes as they appeared at the time the decision was made. To properly determine the "predictive" validity of the model would require persons who were familiar with the model to make a large number of decisions in accordance with the model and a comparable number not in accord and then to assess and compare the effectiveness of these decisions. It is unrealistic to expect managers to take such actions and a methodology must be used which removes or reduces the source of potential error suggested by Vroom and Jago in a way which is acceptable to managers.

Other Aspects of the Study

In addition to questions of validity there are a number of other aspects impinging upon the utility of the model amongst which are the degree to which managers use a variety of decision processes, the adequacy of the taxonomy of decision processes, the perceptions of teachers regarding their perceived and preferred involvement in administrative decision making, the basis of choice within the feasible set, the correspondence of decision processes with specific types of decisions and the identification of situational factors other than those specified by Vroom and Yetton. All of these are areas of investigation relevant to the prime purpose of the study, namely, the determination of the validity and utility of the Vroom-Yetton model.

One decision taken as a result of the review of literature was to substitute a seven step decision process continuum for the five step typology used by Vroom and Yetton. The additional processes, a voting process and a modified consensus process in which all participants had to be willing to go along with the decision rather than give it unanimous support were added. The emotive terms autocratic, consultative and group were discarded and the processes were identified as S1 to S7 with S1 corresponding to the model's AI process and S7 corresponding with GII. The new processes were assigned positions S5 (voting) and S6 (modified consensus).

COLLECTION OF DATA

The study consisted of four phases. In the first, which occurred in May and June, 1979, 35 school principals were approached and asked to grant the investigator an interview on matters pertaining to decision making in the school. Every principal who was contacted agreed to the interview. On meeting the principal the researcher explained the nature of the study and pointed out that two interviews each of about one and one-half hours would be necessary. The hope that the principal would be prepared to allow staff to take part was also raised but no commitment from the principal on this issue was sought. Each interview followed the format shown in the interview schedule presented in Appendix A.

As principals reviewed the decisions which they had either very recently made or were required to make in the near future, brief notes were taken by the researcher. These were later reviewed and case summaries prepared (Appendices G - K). The principal's view of the situational attributes of each decision was collected but the decision process used or which it was thought would be used was not recorded. While the number of decisions sought from each principal was not specified a target of five was established. In a few instances, some nomination of possible areas was necessary to achieve this target but in most interviews the decisions were offered without prompting.

Principal Follow-up Interviews

In order that the decisions which had been made would have time to be fully implemented, the follow-up interviews were not commenced until late in October. This was some eight weeks after school resumed and in most cases four to five months after the decisions had been made.

The expanded notes of the first interview were used as the starting point for the second interview. Again an interview schedule (Appendix B) was used in an attempt to ensure that a comparable approach was followed with each principal. Each principal was asked to read a brief extract (Appendix C) which explained the difference between decision quality, subordinate acceptance and overall effectiveness, before being asked to rate each of these on seven point scales. The earlier perceptions of attributes were recalled and all changes which had occurred and had implications for the attributes were investigated. The decision process used by the principal was established. If an S2 decision was not represented, principals were asked if they could recall using such a process in a group decision situation. Where a group decision was claimed to have been used an attempt was made to determine whether this represented staff willingness to go along with the decision or whether it represented the unanimous view of the staff. Whether or not the decision process to be used was made explicit before the matter was decided was also investigated as was the principal's perception of the organizational importance of each decision.

In addition to the interview concerning each specific decision situation, principals were asked to discuss a brief questionnaire concerning administrative decision making (Appendix D). This was filled out by the interviewer.

Principals were asked if staff could be involved. No principal refused this request. While the selection of staff was left to each principal the researcher suggested that broad sampling was desirable and that, where possible, those people who were most affected by decisions should be amongst the three nominated for each situation.

Staff Involvement

Nominated staff members were given Appendix C to read and were then asked to fill out a questionnaire designed to elicit information regarding decision making in the school generally, their perception of their involvement in administrative decision making and information about the specific decision about which they were being consulted (Appendix E). The researcher had identified, from the case notes, what appeared to be the major focus of each decision, had typed this onto the questionnaire forms and had checked with the principal that the essence of the situation had been extracted before submitting the form to the teacher respondent (Appendix F). Some personal statistical information such as sex, total years of experience and years of service in the present school were collected. These were considered to be additional situational factors which might impinge on decision making patterns in the school.

Considerations Underlying the Data Collection

The methodology for the data collection was designed to take account of the methodological weaknesses identified by Vroom and Jago (1978) in their study. Among the concerns identified by them was the fear that imperfect understanding of the model by the managers might lead to systematic or random errors. The interview method which allowed principals to seek clarification on points about which they were uncertain, should have reduced such errors. A second weakness noted was that because the measurement of all variables was based on self reports there existed the possibility that correlated errors could account for reported correlations amongst the variables. The use of multiple subordinate reports was considered likely to provide another perception against which that of the principal could be compared. Finally, Vroom and Jago (1978:160) noted:

> There is, however, one quite complex line of argument dealing with systematic measurement errors that could conceivably account for all or a substantial portion of the explained variance in this investigation. This argument rests on the fact that the codings of problem attributes were obtained after the effectiveness of the decision had been determined and not at the time the decision was made.

By collecting the manager's perceptions of the situational attributes at, or close to, the time at which the decisions were made this potential weakness in the methodology should have been removed.

Vroom and Jago (1978:161) recommended that:

> Those who conduct future research to assess the validity of the Vroom-Yetton model would do well to obtain independent estimates of the decision process used, problem characteristics and decision outcomes.

This study did not seek independent estimates of problem characteristics. The view was taken that the choice of the decision process to be used was clearly the responsibility of the manager. Therefore, it was with his perceptions that the model dealt and it was thus, his perception of the attributes that was significant. One problem attribute about which teachers could be expected to be informed was whether subordinates would be prepared to have the principal make a decision without consultation. Information on this topic was collected and used both as a cross check on the principals' perceptions and later as the basis for some modification of the model. Collection of the principals' perceptions of the decision process used in resolving the issue was delayed, partly because many of the decisions had not been made at the time of the first round of data collection, partly because some decisions may have been changed between the first visit and the second round of data collection and a different decision style used in making the subsequent decision. Teachers' perceptions of the decision process used were collected on the same form as that used for collecting perceptions of school decision making generally.

THE SAMPLE

The sample consisted of three elements: the schools, the principals and the teachers.

The Schools

Data were collected from 33 schools which ranged in size from less than 150 pupils to over 1600 pupils. Staff sizes ranged from schools having a total staff of less than 10 to a school which had over 100 staff members.

Included in the sample were two elementary-secondary schools and one school catering for students in years 7 - 12. These have been classified as composite schools. See Table 3.1.

Principals in two additional very large high schools were interviewed. Although they indicated that they were quite willing to take

Table 3.1

Distribution of Schools in the Sample by Type and Size

	Type of School			
Total Staff	Elementary	Junior High	High	Composite
10 or less	1	-	-	-
11 - 20	5	-	-	-
20 - 30	6	3	-	-
30 - 40	5	1	1	2
40+	2	3	3	1
Totals	19	7	4	3
Mean Total Staff	27.5	36.7	76	39
Mean Teaching Staff	20.8	30.4	59	30

part in the study, both pointed out that almost all administrative decisions in their schools were made at the subject department level. They suggested that there would be difficulty in identifying situations which teachers would perceive to involve the principal directly and this would make it difficult to provide for teacher response. No attempt was made to collect decision cases in these schools.

The Principals

In addition to a wide range of school size and variety in the levels of education provided, the sample included principals with very diverse experiential backgrounds. At one end of the scale, one principal had 38 years of teaching experience, which included 25 years of experience as a principal and 13 years in his present school. At the other end of the scale was a principal who had only five years total teaching experience, two of which had been as principal in the present school. This is illustrated in Table 3.2.

Table 3.2

Distribution of Principals by Years of Experience

Years	Total Experience	Experience as Principal	Time in Present School
Less than 3	0	3	5
3 - 5	1	10	15
6 - 10	3	8	10
11 - 20	11	9	3
Over 20	17	3	0
Mean (Years)	19.9	9.8	5.9

Of the 33 principals in the sample, 10 were women. This was a substantially higher proportion than existed among all the schools in the districts from which the sample was drawn where the percentage of female principals is of the order of 15 - 16 percent.

In two schools there was an unexpected change of principal between the first and second interviews. In both cases it was possible to maintain contact with the principal initially interviewed and the data concerning decision attributes, explicitness and the process used in making the decision were collected from him. The perception of decision outcomes, however, was given by the current principal.

The Teachers

All principals gave permission for staff to be involved, and in only two schools did principals prefer staff not to be invited to comment. The reservation in both was related to a change in teaching assignment for a teacher because of difficulties in the previous role.

While principals were invited to nominate the teachers who would be invited to respond it was requested that, so far as was possible, no teacher should respond to more than one case. In many schools this meant that almost all teachers who had been in the school in the previous year were invited to respond. This reduced one possible area of bias in the results.

Of the possible 456 responses, 385 or almost 85 percent were received and at least one response was received to 148 of the 152 cases. Some respondents did not answer all questions. In some cases the information omitted was that which could have been used to identify the teacher, in others notes were appended explaining the reason for the omissions. The response rate was high for what was for teachers, an impersonal questionnaire of a type which they are frequently asked to answer. The teachers had widely varying backgrounds of teaching experience as shown in Table 3.3.

Of the 385 respondents, 132 were males, 244 were females; the remaining nine failed to respond to this question.

Teachers in elementary schools made up 60 percent of the sample (231 responses), there were 108 teachers from junior high schools; the remaining 46 taught in high schools.

Table 3.3

Teaching Experience of Teacher Respondents

Factor	Completed Years					Mean	Median
	1	2 - 4	5 - 7	8 - 10	Over 10	(Years)	
Total Teaching Experience	36	82	71	61	126	9.2	7.4
Time in Present School	77	165	66	67		4.4	3.4

Size of the Sample

The size of the sample necessary to allow the use of the proposed methodology presented particular problems in planning the study. The decision had been taken to use seven decision processes and a number of cases involving each of these was desirable. In addition it was essential to have some cases in which the decision processes were consistent with the feasible set and some that were not. If one or two styles were characteristic of school decision making it was possible that there would be some styles about which little information would be available.

Vroom and Yetton's initial attempts to validate the model were unsuccessful partly because too few unsuccessful decisions were provided by managers. Vroom and Jago sought to overcome this problem by specifying that each respondent should supply one successful and one unsuccessful case. The longitudinal collection, because it prevented selection of only successful cases by respondents made it likely that some unsuccessful decisions would be included but no forecast of the comparative numbers of successful and unsuccessful decisions or on the frequency of use of the various decision styles could be made. It was, however, relevant to note that AI appeared in only three of the 12 possible feasible sets whereas CII appeared in nine. Substantial imbalance between cells was therefore likely, and the statistical procedures had to take account of this.

TREATMENT OF DATA

The statistical treatment can be divided into two major sub-sections. The first was concerned with principal and teacher perceptions concerning administrative decision making generally. Such aspects as perceived use of decision processes, perceived and desired involvement in school decision making and the possible relationship of these perceptions with school and personal characteristics was undertaken. The second sub-section was concerned with the statistical procedures necessary to determine the validity of the Vroom-Yetton model.

Statistical Considerations

One of the major concerns in designing statistical procedures is the level of measurement of the data. Consideration of all items collected for both principal and teacher data confirms that it is at least at the nominal level. This requires that there should be equivalence between items in any sub-class. Examination of the data also revealed that almost all of it was also at the ordinal level. To be classified as being ordinal level, sub-categories must stand in some kind of relation to one another.

There were many examples of data of this type. Perceived use of decision processes, for example, are measured on five point scales. It can be assumed that a person who gives a rating of four on one process perceives it to be more frequently used than a rating by the same person of only two. It would not be justified, however, to assume that the first process was used twice as frequently as the second. Within-rater reliability can, however, be assumed and since in comparing, for example, the perceived frequency of use of each of the decision processes each person rates all processes, the sum of these ratings will also be reliable. These data will also satisfy Siegel's requirement for ordinal level data that the scores ". . . stand in a kind of relation to one another." It is not appropriate, however, to assume that these data satisfy the criteria required for them to be classified as interval level which, according to Siegel (1956:26), requires ". . . the distances between any two numbers on the scale are of known size. . . ."

The perceptions of decision process used are also at ordinal level. There is a rationale for the placement of each of the processes S1 to S7 in relation to one another, and this relationship is constant. However, Vroom and Yetton have pointed out (1973:66) that their processes are not equally spaced. By interposing two further processes, S5 and S6, between CII and GII the distances between processes are further changed, and the distances along the scale of subordinate participation do not meet the criteria for interval level measurement.

A further concern was whether the seven point scales on which the success or otherwise of the three decision attributes was measured can be considered as being ordinal or interval level measures. Vroom and Jago have assumed them to be interval level; this assumption was made throughout.

In this study, the very low frequency of use of process S2 and relatively low frequency of S5 posed particular problems since in most cross-tabulations some cells had an expected frequency of less than one. Siegel (1956:178) quoted Cochran (1954): ". . . for Chi Square tests with df larger than one, fewer than 20 percent of the cells should have an expected frequency of less than five." Siegel suggested that combining cells can overcome these problems. However, the decision process S2 is significantly different from any other, and if S2 is combined with S1 then the resulting data cannot be considered to be at the ordinal level since there is not equivalence in the sub-class. The decision was therefore made that where inclusion of decision process S2 precluded the use of otherwise meaningful statistics it would be ignored. Where the inclusion of S5 had a similar effect, cases in which it was used were combined with S6 if the principal considered a vote binding on him and with S4 if he did not consider it binding.

Since most of the data are not interval level, there were limitations on the type of statistical procedures which could be employed. While most of the research hypotheses which follow are directional, for the most part they were tested by application of procedures designed to test the null hypothesis. As explained by Siegel (1956:7), "The null hypothesis is a hypothesis of no differences. It is usually formulated for the express purpose of being rejected. If it is rejected, the alternative hypothesis (H1) may be accepted." In most cases, a null hypothesis as such was not formally stated but if tests of significance for the implicit null hypothesis were rejected then the research hypothesis was accepted or further examined.

Determining the Validity of the Model

A series of statistical procedures were necessary to determine the validity of the model in the school setting.

The first step involved regressing ratings of overall effectiveness on decision quality and acceptance using both principal and teacher ratings of decision success. This procedure allowed determination of whether either quality or acceptance was more important than the other in determining perceptions of the ultimate success of the decision. It was expected, from the underlying assumptions, that for staff members acceptance might be the major concern whereas principals who had overall responsibility for decisions were expected to show no preference.

The decision process used, as reported by the principals was compared with the process prescribed by the model. Those cases in which the manager's behaviour fell within the feasible set were isolated and sorted according to the decision process employed. Those cases in which the behaviour did not agree with the feasible set were similarly treated.

The relationship between agreement with the feasible set and success was tested for significance (χ^2) and strength (ϕ) for each of the processes and the overall result. The use of separate analyses for each process was necessary to correct for the possibility that participative processes were more likely to be within the feasible set than autocratic ones. A relationship between agreement with the feasible set and success could simply reflect the correlation of both variables with participation.

More analytical power was attained by using the seven point ratings instead of the dichotomous dependent variable of success and failure. Two-way analysis of variance using an hierarchical regression procedure was undertaken. Decision process was given priority. Agreement with the feasible set was then introduced as a potential predictor of residual variance. Agreement with the feasible set was then given priority and further two-way analysis of variance performed.

Decisions falling outside the feasible set were analyzed for the number of rule violations, and the possibility of a relationship between the number of rules violated and decision effectiveness was investigated. The effect of the rule violation on both quality and acceptance as well as effectiveness was studied.

The contribution of each rule individually to the validity of the model was also made by comparing the overall effectiveness of cases in which each individual rule was not violated with the effectiveness of the cases in which it was violated.

Teacher perceptions of decision success and their ratings of the three decision outcomes were subjected to the same treatment using, as the feasible set, the problem type identified from the principals' responses to the attribute questions.

In those cases where one teacher's perception of the decision process used differed from that of other subordinates, an investigation was conducted to determine whether there was a relationship between perceived degree of involvement and perceived overall effectiveness of the decision. This procedure allowed testing of one of the model's basic assumptions, namely, that subordinate acceptance is directly related to overall effectiveness.

CONSIDERATIONS ARISING FROM METHODOLOGY

While the methodology of the study was designed to remove weaknesses of previous studies the use of an interview technique as the major data gathering device and the use of subordinate perceptions of the decisions, raised new issues.

The Nature of the Interviews

While an interview schedule was used it was not prescriptive in its form but rather indicated the chronology of introduction of the questions instead of specifying the wording to be used. Essentially the approach attempted was that of a colleague from a different geographical location meeting with an Albertan principal in a conversational setting. Particular attention, however, was paid at step seven of the first interview to leaving the principal with the opportunity to raise any issue so long as the two criteria, that the decision was within the principal's area of responsibility and had implications for at least two staff members, was met.

Schatzman and Strauss (1973) pointed out that ". . . the listener must presume that what he hears is itself empirically grounded." They pointed out too that the listener could consider the logic of what is said, could seek information from others or could use his own prior experience as a check against what he heard. However, the whole of the Vroom-Yetton model is based on the perception of the situation by the manager, and there is no reality except that which he perceives. The teacher perceptions of success also do not measure objective reality; they represent a view of a situation from a perspective different from that of the principal. If the principal perceives situational attributes in a certain way, then that is reality for him. If he chooses a decision process based on that perception and views the result as being effective while his subordinates perceive a different decision process and a different degree of success, this is not evidence that false information has been given but of different perceptions of the situation. Jones and Nisbett (1972:15) have pointed out a number of reasons for divergent perceptions by actor and observer perhaps the most important of which is the "differential salience of the information available to both actor and observer." Since the principal is the focus of the Vroom-Yetton model, it is important that his perception of reality should be fully investigated, and the two interviews were designed to allow this to be done.

Subordinate Reports

The use of subordinate reports of decision process used and decision success achieved raised several methodological issues. The first of these was concerned with the manner in which subordinates were chosen. This was left to the principal to decide; however, the researcher's request to have as many teachers involved as possible and that those involved should be those most affected by the decision was considered to be at least a partial protection against bias. In most schools five "cases" were collected and thus 15 staff responses were necessary. By seeking the widest possible staff representation it was expected that over half the staff would be involved, except in the largest schools. In small schools it was clear that a number of staff members would have to furnish several replies. Partly because of this, the total number of staff responses to the general section of the questionnaire is not three times the number of cases.

A second methodological problem was that teachers were not familiar with the model. While a short extract explaining the differences between decision quality, subordinate acceptance and overall effectiveness was distributed, it was considered that if further pre-reading was required, e.g., of the range of decision processes, there would be resistance and a lowering of the response rate. Simplification of the language of the model was therefore used in phrasing the questions. However, it is possible that unfamiliarity with the language tended to reduce the reliability of the teacher data.

While a good deal of research has taken place concerning subordinate perceptions of leadership style, much of this has been in laboratory studies or in generalized perceptions of how "autocratic" or "democratic" a leader is. Often these studies have used hypothetical cases as their basis; for example, Vroom and Jago (1975) applied the standardized set of cases to leaders and their subordinates. The latter were asked to describe how they believed their superior would act in each situation, and this was compared with the leader's description of how he would behave. Given the hypothetical nature of the design of the study there is little surprise at the conclusion that "Comparison procedures did not support correspondence between subordinate described and superior reported behaviors." It was believed that the present study, because it focussed on specific events and because principals were asked to nominate those teachers who were most affected by the decision, would result in a degree of correspondence between principal and teacher perceptions. Ilgen and Fujii (1978:642), however, pointed out:

> . . . the same leader behavior measured by two or more group members may be perceived quite differently. It has been assumed that these perceptual differences only create error variance in the measurement

> of leader behavior and that the process of averaging leader ratings across all group members should reduce the bias.
>
> Recently Graen and his associates have questioned the practice of basing leader behavior on the average of subordinate ratings. . . . They have argued cogently that leaders do not behave in the same way toward each subordinate as is assumed when an average leader behavior is used.

If this contention is valid some discrepancies between various respondents would be expected. Where the individual perceptions of the decision process used differed, an analysis was made to determine whether there was a relationship between the level of participation and the perception of the degree of overall effectiveness, subordinate acceptance and decision quality. This analysis contributed to testing the fundamental assumptions underlying the Vroom-Yetton model, namely, that overall effectiveness is a product of decision quality and subordinate acceptance and that the level of participation and subordinate acceptance are positively related.

HYPOTHESES OF THE STUDY

In Chapter 1 the questions with which the study was concerned were stated. The literature review provided information on which it was possible to formulate probable relationships between a number of variables; consequently, hypotheses were developed in relation to the various research questions. The hypotheses as presented below are arranged in a logical order of development not in a perceived order of importance.

Hypothesis 1.1. The taxonomy of decision processes used by Vroom and Yetton does not include all processes used in administrative decision making in schools.

Hypothesis 1.2. School principals use a variety of decision processes in making administrative decisions in schools.

Hypothesis 1.3. As measured by principals' perceptions, the parliamentary or voting process is used more frequently in schools than the process designated AII by Vroom and Yetton.

Hypothesis 2. Principals perceive teachers to be satisfied with their involvement in administrative decision making.

Hypothesis 3. Organizational and principal characteristics have a significant influence on the decision processes used in schools.

Hypothesis 4. Principals perceive decisions consistent with the feasible set to be successful in a greater percentage of cases than decisions which are not consistent.

Hypothesis 5. Principals' ratings of decision outcomes exhibit no significant difference between decision quality and subordinate acceptance as predictors of overall effectiveness.

Hypothesis 6. The mean ratings of decision outcomes of decisions consistent with the feasible set as perceived by principals are higher than those of decisions which are not consistent.

Hypothesis 7. Agreement with the feasible set accounts for a greater proportion of the variance between decisions which are consistent with the feasible set and those which are inconsistent than does decision process.

Hypothesis 8. Principals' ratings of decision outcomes are inversely related to the number of decision rules violated.

Hypothesis 9. Decision rules contribute differentially to decision outcomes as measured by principals' ratings of these outcomes.

Hypothesis 10. Teachers perceive decision processes additional to those specified in the Vroom-Yetton model to be used in schools.

Hypothesis 11. Teachers perceive themselves to be less involved in administrative decision making than they wish to be.

Hypothesis 12. There are significant differences in the desire of different teachers for involvement in administrative decision making, and these differences are related to sex and teaching experience differences.

Hypothesis 13. Different teachers ascribe different decision processes to the same decision.

Hypothesis 14. Teachers who perceive themselves to have been involved in more participative decision processes than their colleagues will perceive decisions to have greater subordinate acceptance and greater overall effectiveness.

Hypothesis 15. In the perception of teachers, there is a stronger correlation between subordinate acceptance and overall effectiveness than between decision quality and overall effectiveness.

Hypothesis 16. The mean ratings of decision outcomes as perceived by teachers are lower than those of principals.

Hypothesis 17. Where teachers disagree with the process they perceive the principal to have used, they claim that they would use a more participative process.

Hypothesis 18. Principals perceive a higher degree of subordinate acceptance of the principal making the decision than is granted by teachers.

Hypothesis 19. In respect of administrative decision making generally, principals perceive themselves to use more participative decision processes than they are perceived to use by teachers.

Hypothesis 20. Teachers perceive themselves to have more influence on the making of specific decisions than they are perceived to have by principals.

Hypothesis 21. Where the decision process used, as perceived by the teacher, is consistent with the feasible set, it is more likely to be considered successful by teachers than where it is not consistent.

Hypothesis 22. Where the decision process used, as perceived by the principal, is consistent with the feasible set, it is more likely to be considered successful by teachers than where it is not consistent.

Hypothesis 23. Where the decision process used, as perceived by the principal, is consistent with the feasible set, the mean overall effectiveness, as measured by teachers' ratings, will be higher than where the process is inconsistent with the feasible set.

Hypothesis 24. Where teachers' perceptions of the decision process used are consistent with the feasible set the teachers' ratings of decision outcomes will be higher than where they are not consistent.

The manner in which each of these hypotheses was tested is indicated in the chapters which follow. Where statistical tests were applied, an appropriate null hypothesis was stated implicitly, and a decision on the research hypothesis was made on the basis of the outcome of the test of the null hypothesis.

Chapter 4

ADMINISTRATIVE DECISION MAKING IN SCHOOLS AS PERCEIVED BY PRINCIPALS

The purpose of this chapter is to report results of the analysis of data provided by principals. These data were collected during two structured interviews and through the use of a questionnaire.

The chapter addresses the first nine hypotheses of the study. These hypotheses cover the nature of administrative decision making in schools as perceived by principals, organizational influences which may be related to the choice of decision processes and matters concerning the validity of the Vroom-Yetton model of decision making in the school context.

PRINCIPALS' GENERALIZED PERCEPTIONS REGARDING ADMINISTRATIVE DECISION MAKING

Perceived Use of Decision Styles

As a result of the review of literature, two decision processes additional to those used in the Vroom-Yetton model were included in this study. Consequently, it was necessary to determine if this action was justified.

The Vroom-Yetton model assumes that managers use a variety of decision processes. Consequently, it was necessary to ascertain whether a variety of decision styles were used by school principals.

The decision process which Vroom and Yetton term AII has no direct parallel with decision styles suggested in other taxonomies. It was necessary to establish whether this process was used in schools and thus was appropriate for inclusion in a taxonomy designed for use in schools.

Three sub-hypotheses were framed to facilitate the inquiry necessary to obtain answers to the three issues raised above.

> Hypothesis 1.1. The taxonomy of decision processes used by Vroom and Yetton does not include all processes used in administrative decision making in schools.
>
> Hypothesis 1.2. School principals use a variety of decision processes in making administrative decisions in school.
>
> Hypothesis 1.3. As measured by principals' perceptions, the parliamentary or voting process is used more frequently in schools than the AII process described in the Vroom-Yetton model.

The five decision styles included in the Vroom-Yetton taxonomy as well as the two styles which had been added for this study were discussed with principals. All principals indicated that they saw significant differences between each of the styles.

Principals were asked to rate the styles on a six point scale (0 - 5) according to their perceived frequency of use in the whole range of administrative decisions in the principals' schools. An analysis of the results is provided in Table 4.1.

These responses support the contention of Vroom and Yetton (1973: 64) that leaders (or managers) use a variety of decision styles. Of the 33 respondents, 22 indicated that they used all seven processes, four that they used six processes and six that they used five processes. One respondent indicated that only the polar processes S1 and S7 were used. It may be significant that this claim was made by a very experienced principal in the smallest school in the sample.

Table 4.1

Frequency of Use of Decision Styles in Administrative Decision Making as Perceived by Principals

Rating	S1	S2	S3	S4	S5	S6	S7	Total
	Decision Style							
0	0	3	2	1	6	4	5	21
1	5	14	2	1	5	8	11	46
2	8	10	10	6	6	8	7	56
3	11	1	10	14	8	5	3	51
4	8	4	7	11	8	6	5	49
5	1	1	2	0	0	2	2	8
Total	33	33	33	33	33	33	33	231
Mean	2.76	1.76	2.73	3.00	2.21	2.21	1.94	
Median	2.82	1.46	2.75	3.11	2.42	2.06	1.57	

Row 1 of Table 4.1 indicates the number of principals who reported not using one or other of the decision processes. Only S1 was reported to be used by all principals while S5 and S7 had six and five respondents respectively who did not use these processes. Two principals, both of whom were very experienced, used neither S6 or S7 but reported that S5 (voting) was their most frequently used decision process. This process provided these principals with access to a decision style which gave subordinates control over the decision. Subordinate control is characteristic of processes S6 and S7.

Inspection of the principal ratings of frequency of use revealed wide variation in the row values. The sum of row frequencies varied from 7 to 25. It was assumed that, while there were between rater variations, each respondent's ratings represented accurately the comparative frequency of use of each decision process within each school.

The relatively high frequencies assigned to processes S3 and S4 is consistent with Heller's (1971) view that managers tend to seek subordinate involvement but not at the cost of surrendering control over the decision. The high reported frequency of use of process S1 was predictable since principals were asked to consider all of the administrative decisions for which they were responsible in making their response. The frequent use of this style can be attributed to the many routine decisions which all managers make. As was predicted, the S2 process was seen by principals as being least frequently used. However, its reported frequency and the comments of principals indicated that the process has a place in a taxonomy of decision processes appropriate for use in schools.

An alternative way of viewing the ratings is to determine how many processes were used more frequently than any given process. Data indicating this is shown in Table 4.2.

Analysis of this table reveals that processes S3 and S4 were, jointly, the processes which had the highest number of persons who ranked no process above them in frequency of use. Also, S5 was revealed as a very important decision process with ten principals rating it as first or equal first choice. While seven respondents indicated that no process was preferred above process S7, the large number who ranked it as being one of the least used processes indicated the division of opinion amongst school administrators on the practicability of this style in the school context.

Table 4.2

Priority of Perceived Use of Decision Styles

No. of Processes More Frequently Used	Number of Responses						
	S1	S2	S3	S4	S5	S6	S7
0	8	6	13	13	10	7	7
1	6	0	6	8	4	5	1
2	6	1	5	5	4	3	3
3	9	7	6	4	5	5	3
4	3	10	1	3	3	4	5
5	1	6	2	0	5	6	9
6	0	3	0	0	2	3	5

Conclusions Relating to Hypothesis 1

From the data provided in Tables 4.1 and 4.2, there is evidence to support all three sub-sections of hypothesis 1. The reported results indicate the need for an extended taxonomy to reflect existing administrative decision making processes in schools. There is strong evidence to support the general hypothesis that principals do use a variety of decision making styles rather than a single autocratic or democratic style. This is an important finding since the Vroom-Yetton model is dependent upon the manager's ability to vary his decision style in varying situations. There is evidence to support hypothesis 1.3 that the AII decision style is less used in schools than any other decision process but is, nevertheless, a necessary element in the taxonomy.

While these findings are justified by the data, they represent perceptions of how decisions are made and not how decisions are actually made. Information relating to the latter is provided by an examination of case data, later in this chapter.

Principals' Perceptions Regarding Staff Involvement

> Hypothesis 2. Principals perceive teachers to be satisfied with their involvement in administrative decision making.

Five-point scales were used to measure principals' perceptions of the extent to which they involved staff members in administrative decision making and their perceptions of staff members' desires for involvement. The results are shown in Table 4.3.

Table 4.3

Principals' Ratings of Staff Involvement in Administrative Decision Making

Rating	Perceived Present Involvement	Perceived Desire of Staff for Involvement
1	0	0
2	1	2
3	12	15
4	16	13
5	4	3
Median	3.77	3.40

The higher median score for perceived present level of involvement indicated that principals believed that staff were already more involved than they preferred to be.

Cross tabulation of the responses indicated that of the 33 principals, 22 believed that teachers' present levels of involvement coincided with their desired levels. In six cases principals believed that teachers were being involved marginally more than they wished and in only one case, indicated by a difference of two points, did a principal believe his staff was being involved substantially more than they wished. Only three principals considered that staff desired more involvement than they were experiencing, and in each of these cases only a one point difference in levels was perceived. No significant differences existed between schools of different sizes or between those enrolling children of different age levels.

Many principals, when asked how much they involved teachers in decision making, indicated that they believed involvement in specific decisions should be dependent upon the degree to which the teacher would be affected by the decision. A number of principals remarked that there was almost always an attempt to involve teachers in those decisions which had substantial implications for them. Hoy and Miskel (1978) proposed that two factors should be considered in deciding who should be involved in decision making. The first factor was the teacher's "stake" in the outcome. It appears that this factor is being considered in many schools. Hoy and Miskel's second criterion was the teacher's "expertise" in the issue being considered. Although no question designed to elicit whether this criterion was used was included in the questionnaire, on no occasion did this factor emerge in discussion as being one which was taken into account.

In a number of schools, the principal made the point that recently there had been some reduction in both the demand for participation and of the involvement of teachers in the decision making process. Budgeting was used as an example by several principals as being one area where, initially, there had been interest by teachers in being involved but that this interest had not been sustained.

In view of the foregoing, there was support for the hypothesis that principals believed staff members to be satisfied with their present involvement in decision making.

The Effects of Involvement on Decision Making

A number of researchers have addressed the question of what effect involvement has on aspects of decision making such as the quality of decisions produced, subordinate acceptance of decisions as well as the total time taken to make the decision and provide for its implementation. While there was no firm evidence on which an hypothesis could be based, these questions seemed to be sufficiently important to justify an exploratory analysis. Data for this analysis were provided by principals' responses concerning the three aspects mentioned above.

To provide a frame of reference within which these questions could be considered, the researcher explained to principals, during the interview, that there were varying views by writers on the effects of involvement. Some writers believed that in involving subordinates their views had to be taken into account and that this could lead to the making of decisions of lower quality than might be made by the principal. On the other hand, it was pointed out involvement made it possible to gather more information and the availability of different points of view potentially contributed to better decisions. Similar alternatives were explained for both acceptance and total time taken. The researcher explained that a score of three (on a five point scale) would indicate that staff involvement had little effect on the factor under review, that a score of two or four indicated respectively a marginal decrease or increase of the factor and that a score of one or five indicated that substantial changes in one or other direction resulted from involvement.

The results indicated that 22 of 33 principals considered that the quality of decisions was improved, to some degree, by the involvement of staff in the decision making process; however, 18 of these believed that the improvement was marginal. Only three believed that, on balance, the quality of decisions was likely to be adversely affected by staff involvement.

None of the principals in the study believed that involvement had an adverse effect on the acceptance of decisions by subordinates; however, 13 believed that it had substantial positive effects. The finding, that involvement was perceived by managers to have a greater effect on staff acceptance than on decision quality was different from that reported by Heller (1971) and may be indicative of basic differences between decision making in commercial and industrial institutions and in schools.

In setting the context for the question concerning the time taken, reference was made to the view expressed by Maier (1955) that autocratically made decisions must be communicated and acceptance for them worked for before they are implemented whereas involvement tends to do these things simultaneously with making the decision. While 22 principals believed that staff involvement did increase the total time taken in making the decision and preparing for its implementation, only nine of these believed that the increase was substantial.

It is perhaps pertinent to point out that the interview method of collecting data, because it allows new ideas to be introduced to respondents and allows a context to be set, is particularly appropriate for the investigation of subjective perceptions such as those discussed above. There is a danger, however, that the interviewers own personal biases may influence respondents, and particular care was taken in drawing up and adhering to the prepared interview schedule.

Principal Characteristics and Perceived Frequency of Use of Decision Styles

Analysis of principals' perceptions of the frequency of use of different decision making styles was carried out with respect to such characteristics as the principal's total teaching experience, the length of time the principal had been in the present school, the type of school in which he was employed and the sex of the respondent.

Separate analyses were carried out for each of the decision processes. Since there were many cells of small size, Chi square results could not be used as tests of significance. Since the data were at the ordinal level, Kendall's Tau tests were used as measures of association and significance. Significant results of these tests are provided in Table 4.4.

The interpretation of the results in Table 4.4 indicate that:

(1) the perceived frequency of use of process S5 is lower among secondary school principals than the perceived frequency of use by elementary school principals.

(2) principals with long total teaching experience tend to use process S4 less than principals with shorter total teaching experience.

Table 4.4

Association Between Principal Characteristics and Perceived Frequency of Use of Decision Processes

Characteristic	Decision Process	Kendall's Tau Value	Kendall's Tau Significance
Type of School	S5	-0.306	0.023
Teaching Experience	S4	-0.296	0.025
Experience as Principal	S5	-0.287	0.043
	S6	-0.409	0.006
Years in Present Position	S2	0.328	0.020
	S6	-0.338	0.020
Sex of Respondent	S7	-0.386	0.040

(3) experienced principals perceive themselves to use processes S5 and S6 less frequently than persons who have been principals for shorter periods.

(4) perceived use of the S2 process is directly related to length of service in the present position, while use of process S6 is inversely related indicating that principals with longer service in a particular school perceive themselves to use the process less frequently.

(5) women principals perceive themselves to use process S7 less than male principals perceive themselves to use the process.

The results reported above provide interesting insights into how principals perceive themselves to make decisions. However, these perceptions do not necessarily reflect the actual decision making practices used in schools. These can be examined through the analysis of actual case data. This is done in the section that follows.

ANALYSIS OF SPECIFIC CASES OF DECISION MAKING IN SCHOOLS

As a result of the initial interviews, data relating to 168 decision situations or "cases" were collected. The second interview, which took place between five and six months later, revealed that 152 of these cases had been carried forward to the extent that judgements on their success could be made. In five of the 16 cases not resolved, the need for the decision had disappeared. As an example, changed enrollments meant that the need for a split-grade class which had been anticipated did not eventuate. In four cases no action had been taken; the decision either had been postponed or the underlying situation had been ignored. In three cases action had been taken at a higher level and thus the decision was removed from the principal's control. In one case the alternatives which were being considered disappeared, and a forced course of action resulted. Given the substantial time lapse between the first and second interviews and the uncertainty surrounding so many of the decisions, the percentage of cases which had been completed was greater than had been anticipated.

In the followup interview, principals were asked to describe what had happened in regard to the particular case since the earlier interview. At the conclusion of their descriptions they were asked to select from the seven decision processes the one closest to that used in making the decision. Included in the 152 responses were all seven decision styles.

This provided strong supportive evidence for the first two sub-hypotheses since principals' actions supported their perceptions reported earlier. The results are outlined in Table 4.5.

Table 4.5

Frequency of Use of Seven Decision Processes - Case Data

	S1	S2	S3	S4	S5	S6	S7	Total
Frequency	36	2	31	27	6	30	20	152
Percent (%) of Responses	24	1	20	18	4	20	13	100
Rank Order	1	7	2	4	6	3	5	

The frequency of use of the different decision processes actually used in school decision making was compared with the principals' generalized perceptions of frequency of use. Some differences were found to exist and are reflected in the different rank orders shown below:

Perceived Rank	S4	S3	S1	S5	S6	S7	S2
Realized Rank	S1	S3	S6	S4	S7	S5	S2

A number of researchers have provided evidence that managers perceive themselves to be more participative than they are considered to be by their subordinates. However, in this case principals' actual performance was being compared with their perception of the extent to which they shared influence in the decision making process with their subordinates. The result that S1 was used more than it is perceived to be used supports the contention that principals (as managers) tend to be less participative than they perceive themselves to be. However, their preference for S6 over the less participative S4 process in the cases did not support the contention.

Further development of this issue is reserved until Chapter 6 when teacher data can also be given consideration.

Institutional Characteristics and Choice of a Decision Process

Hypothesis 3. Organizational and principal characteristics have a significant influence on the decision processes used in schools.

The Vroom-Yetton model is based on consideration of seven situational attributes which may vary with each decision to be made. Vroom and Yetton (1973:104), using standardized cases, found that situational factors accounted for 27 percent of the variance in managers' behaviour and that individual factors accounted for only seven percent. Other writers have suggested other situational factors which they considered to be important. Heller et al. (1974) suggested that immediate situational variables such as job function and organizational level were important as was the size of the organization and the number of hierarchical levels. A number of elements which might be seen as being likely to affect the choice of a decision process, were tested for significance. Some of these related to the principal, others to the school and others to the nature of the decisions to be made. These are described below.

Experience of Principal in School

It was hypothesized that a principal who had only recently taken up duties in a school would use decision processes which allowed use of the experience of the staff more than a principal who had been in the school for a longer period. Fiedler (1978:122) had suggested that it takes time for a leadership situation to change and specifically suggested that: ". . . for school principals it appears to be between 2 and 3 years." Data to allow testing of this possibility were collected and appear in Table 4.6. It should be noted that only five decision processes are reported. Process S2 has been ignored and process S5 partitioned between S4 and S6. The basis for this partitioning is given on page 109.

Table 4.6

Frequency of Decision Process Used by Time as Principal in Present School

Time in School (Years)	Decision Process Used					Total
	S1	S3	S4	S6	S7	
Less than 3	8	5	4	4	2	23
3 - 6	11	10	9	14	9	53
7 - 10	5	5	12	9	7	38
More than 10	12	11	4	7	2	36
Total	36	31	29	34	20	150

A Kendall Tau C test was applied to these data. No statistically significant relationship existed and thus the null hypothesis that length of time in the school had no relationship with decision process used could not be rejected.

Frequency of Use of Decision Style and Sex of Principal

Frasher and Frasher (1979) have indicated some studies which suggested that teachers preferred women principals partly because their decision making and problem solving is: ". . . illustrative of 'feminine' modes of accommodative behavior." They pointed out (1979:2), "The women principals sought and used information from others and involved both superordinates and subordinates in decision making whereas male principals tended to act alone." Table 4.7 provides data which allow consideration of this possibility.

Table 4.7

Frequency of Use of Decision Process and Sex of Principal

Sex of Principal	S1	S3	S4	S6	S7	Total
Male	27	19	21	26	13	106
Female	9	12	8	8	7	44
Total	36	31	29	34	20	150

The Chi Square value of 2.6 is not significant, and the results of this study provide no support for the hypothesis suggested by Frasher and Frasher.

Tests of statistical significance were also applied using (1) the teaching experience of principals and (2) their experience in the principal role as independent variables and choice of a decision process as the dependent variable. None of these hypothesized relationships were significant at the level of significance necessary (0.05) to reject the null hypothesis that choice of a decision process was not related to experiential background. This finding differs from findings reported earlier where perceptions of decision use not the results of actual cases provided the data.

Size of School and Use of Decision Process

The basis for the classification of schools by size was the number of staff employed. The data necessary to determine whether there was a relationship between size of school and the frequency of use of different decision processes are contained in Table 4.8.

Table 4.8

Frequency of Use of Decision Processes by Number of Teachers in Staff

	Decision Process Used					
Number of Teachers	S1	S3	S4	S6	S7	Total
Up to 10	1	0	0	0	4	5
11 - 15	5	4	3	5	0	17
16 - 20	2	2	4	5	4	17
20 +	28	25	22	24	12	111
Total	36	31	29	34	20	150

A Kendall Tau test was applied to these data. The results did not reach statistical significance.

Type of School and Decision Process

Patterns of organization are markedly different between elementary and secondary schools; consequently, it seems possible that this could influence the decision processes used by principals. Three categories of school were distinguished. The first group consisted of schools which dealt primarily with the elementary grades irrespective of the actual grades in the school. The second group consisted of junior high schools. The third group consisted of high schools. Composite school cases were assigned according to the level of the school at which they occurred. The data are shown in Table 4.9.

Table 4.9

Frequency of Use of Decision Process by Type of School

	Decision Process					
Type of School	S1	S3	S4	S6	S7	Total
Elementary	14	19	17	27	15	92
Junior High	18	7	6	3	5	39
High School	4	5	6	4	0	19
Total	36	31	29	34	20	150

Kendall's Tau C = -0.189
Significance = 0.0008

A Kendall Tau test was applied to these data. The results indicated that the level of involvement, as reflected through the use of decision processes, is inversely related to the type of school. This would indicate that, as perceived by principals, elementary schools are more participative in their decision making practices than secondary schools.

Nature of Decision and Decision Process

A further factor which might have an influence on the decision process was the nature of the decisions which were to be made.

Since all of the data had been collected at the same time of the year, it was expected that there would be substantial similarity between the cases identified by the different principals. In an attempt to determine whether the nature of decisions was a significant influence, the cases were categorized in several different ways.

The first classification was based on functional categories. Cases were classified under such headings as timetable, budget, instruction and supervision. The results strongly reflect the time of the year at which the collection was undertaken. Timetable matters accounted for 40 percent of the cases, matters relating to instruction 20 percent, budget and student supervision concerns each accounted for 12 percent and matters relating to student promotion and reporting to parents for 10 percent. A category concerned with student discipline had been anticipated. Since there was only one case, it was merged with the miscellaneous category which also included such concerns as admission and graduation policies, the promotion or granting of responsibility allowances to teachers and action regarding fund raising.

Pilot studies had indicated the possibility that certain processes were frequently used to resolve issues of the same type. To test whether this was true of the wide range of activities contained in this sample, cases were classified according to functional category and further sub-divided among the seven decision processes. The result is shown in Table 4.10.

Table 4.10

Frequency of Use of Decision Processes Associated with Different Functional Areas

Function	Frequency of Decision Process							
	S1	S2	S3	S4	S5	S6	S7	Total
Timetable	16	1	20	7	2	9	6	61
Budget	5	0	3	5	0	4	2	19
Supervision	6	1	1	3	1	3	1	16
Reporting	2	0	0	2	0	8	1	13
Instruction	3	0	5	5	3	5	8	29
Miscellaneous	4	0	2	5	0	1	2	14
Totals	36	2	31	27	6	30	20	152

Discrepancies between expected and observed frequency in the contingency table were greatest for the use of S3 for timetable matters, of S6 for matters concerned with promotion of students and reporting to parents and of S7 for matters relating to instruction. No statistically significant relationship was revealed by analysis of the data.

A second classification was made using the decisional categories cited by Mintzberg (1973:77). These categories relate to resource allocation, entrepreneurial activities, disturbance handling and negotiating. The importance of the allocative function of the principal was revealed by the classification, 62 percent of all cases being concerned with this aspect.

A role was categorized as being entrepreneurial if it involved the principal in trying to bring about change even if this change overlapped other roles such as resource allocation. Consequently, the case of a principal proposing the grouping of grades 2 and 6 was categorized as entrepreneurial since it involved gaining acceptance from the staff of a pattern quite different from that usually employed. Clearly, however, this decision also included resource allocation elements. Of all the decisions 23 percent were classified as being entrepreneurial in nature.

Mintzberg reserves the category "negotiation" to interaction with bodies outside the organization. In this study it was used where negotiation between the school and associated bodies was involved, e.g., the Board and parent groups. The number of such cases was less than 10 percent of the total while the disturbance handler function accounted for less than 6 percent of cases. As had been done with the functional categories, the Mintzberg categories were sub-grouped according to the process which had been employed by the principal in making the decision, to determine if different processes were used as standard procedures for handling decisions of different types. The data are contained in Table 4.11. No relationship of statistical significance was found in the analysis of the data.

A further categorization was made using a classification scheme

Table 4.11

Frequency of Use of Decision Processes Associated with Mintzberg's Categories

Function	S1	S2	S3	S4	S5	S6	S7	Total
Resource Allocator	23	1	26	14	3	18	7	92
Entrepreneur	4	0	5	7	3	9	8	36
Disturbance Handler	5	0	0	2	0	0	2	9
Negotiator	4	1	0	4	0	3	3	15
Total	36	2	31	27	6	30	20	152

devised by Naylor and reported by Castore (1978:269). This scheme suggested that decisions might be classified according to the judgement contexts in which they occurred. Castore suggested a simple four cell matrix of judgement contexts as illustrated in Figure 4.1.

	Type of Judgemental Response	
	Statement of Preference	Description of Alternatives
Criterion Present	Cell I	Cell II
Criterion Absent	Cell III	Cell IV

(Castore, 1978:269)

Figure 4.1 Classification of Decision Processes by Castore's Categories.

Castore suggested that in Cells I and II a ". . . correct answer is definable in an actuarial sense or is knowable within a relatively short period of time." However, (1978:269):

> . . . in the contexts typifying Cell III, the preference judgements are based primarily on affective reactions (like-dislike). Such judgements are reflections of personal opinion and are not subject to the same types of verification as those in Cells I and II.

Castore reported (1978:270):

> . . . Vroom and Yetton (1973) indicate that many of the decision situations faced by upper level managers, and from these manager's reports their most difficult decisions, are more typical of those found in Cells III and IV.

There is a possibility that schools as human service organizations have many decisions which must be made without definite criteria and which require a statement of preference in the form of a decision. The Castore classification may be viewed as a device for separating those decisions in which objective judgements involving a substantial degree of information and objectivity, and thus certainty (Cells I and II), from those where there is a substantial degree of uncertainty (Cells III and IV).

Classification of the 152 decisions, using these categories indicated that 88 decisions or 58 percent were type I, 56 or 37 percent were type III, three were type IV and only two were type II.

Castore's categories were then grouped according to the decision process used as shown in Table 4.12.

Again the limitation of small cell size and the limited statistical processes available with a nominal and ordinal variable precluded the establishment of any positive relationship between decision process and the cases as categorized in Table 4.12. Treating the cells as ordinal variables (along a continuum of certainty) yielded a statistically significant correlation ($p = 0.0443$) but the relationship was not strong

Table 4.12

Frequency of Use of Decision Processes Associated with Castore's Categories

Category	S1	S2	S3	S4	S5	S6	S7	Total
Cell I	25	2	21	14	2	13	12	89
Cell II	0	0	7	1	0	5	0	13
Cell III	10	0	3	12	4	11	7	47
Cell IV	1	0	0	0	0	1	1	3
Total	36	2	31	27	6	30	20	152

(r = 0.138). This would suggest that in decisions where there is a good deal of uncertainty, participative processes tend to be used more than in cases where there is greater certainty.

Castore suggested (1978:271) that in Cell III, ". . . the focus of the decision process is or should be on reaching a group decision which is maximally representative of group member preferences." This would suggest that decisions of this type would be best determined using decision processes that allow all points of view to be considered, i.e., S4 - S7. In fact, 71 percent of the decisions categorized as Cell III were resolved by processes S4 - S7 compared with 53 percent of the Cell I cases which were resolved in this way.

Summary

The institutional characteristic which can be asserted to be related to the actual use of decision processes is the type of school, with elementary schools being more participative than secondary schools. There is also some evidence to suggest a relationship between decision process and the degree of certainty of the judgemental context within which decisions are made.

ADMINISTRATIVE DECISION MAKING IN SCHOOLS AND THE VROOM-YETTON MODEL

One of the major concerns of the study was to determine the validity of the Vroom-Yetton model. For this to be done, it was necessary to determine whether the decision process used in making the decision was consistent with the feasible set. This, in turn, required that the answers to the decision attribute questions be traced along the decision tree to establish the problem type. Each problem type, in turn, has an associated feasible set.

During the years since the model was published (1973), there have been changes in the wording of the questions. Some of these changes have been made in an attempt to make certain questions easier to interpret. Other changes have reduced the demands of the model. As an example of this latter tendency, the prior probability question was amended by adding the qualifier "reasonably" in the question so that in its present form the question is, "If I were to make the decision by myself, am I reasonably certain that it would be accepted by my subordinates?"

In designing the model, Vroom and Yetton (1973) assumed that for each separate situation each decision attribute would be separately considered. Not all questions are asked in every situation since some answers make the consideration of other attributes unnecessary. As an example, some situations do not have a quality requirement. In such cases, questions relating to information are not asked because no information is needed if the problem does not have a quality requirement. Data relating to the frequency with which each attribute question was asked and the responses given are provided in Table 4.13.

Table 4.13

Frequency Distribution of Responses to Decision Attribute Questions in the Vroom-Yetton Model

Decision Attributes	Yes	No	Not Applicable
Quality	148	4	0
Information	99	49	4
Structure	29	20	103
Acceptance	133	19	0
Prior Probability	63	71	18
Goal Congruence	81	67	4
Conflict	19	6	127

For most of the questions the distribution of responses suggests that the questions are fulfilling the purpose of discriminating between different situations since there is a reasonably even distribution of "yes" and "no" answers. There is less confidence about the quality and acceptance questions where disproportionate numbers of "yes" answers were received. This matter will be discussed in Chapter 7.

Although a reasonable distribution of "yes" and "no" answers was received, there was no guarantee that individual principals were using different responses for the same attribute in each case. To test whether the same answer was being given in each case, the prior probability responses were subjected to scrutiny. Vroom and Yetton (1973:28) explained that: ". . . subordinates may accept the leader's decision because they believe it is his legitimate right to make that decision." This right, they assert, arises from the leader's legitimate power, his expert power or his referent power. It is to be expected that, in different situations, the degree of each of these sources of power would change and this should cause principals to vary their responses if each question was being considered as a separate entity. Of the 33 principals, 24 provided at least one "yes" and one "no" answer. Of the nine who answered only "yes" or "no," one had only one case in which the question was applicable, four had only two cases, three had three cases while one gave the same response, "yes," to all six questions.

From this review it would appear that at least a majority of principals consider the attributes separately for each specific case.

Consistency with the Feasible Set

During the first interview the principals' perceptions of the decision attributes were collected and on the basis of this information the feasible set of decision processes was established. At the second interview the principal was asked to identify, from the seven options being used in this study, the decision process closest to that actually used in making the decision. It was then necessary to determine whether the principal's decision was consistent with the feasible set. This was a straight forward matter where the processes coincided with the Vroom-Yetton typology. However, two processes, S5 and S6, were not contained in the model and a decision had to be made in the cases where these had been used.

Vroom and Yetton's CII and GII categories both rely on a group consultative methodology. The essential difference between the two processes lies in the fact that in the CII mode the manager reserves the right to make the final decision whereas in the GII mode the agreement of all is needed. In considering how decision process S6 should be classified it was considered that S6 was closer to GII than to CII. In CII the manager retains the power to impose a decision on his subordinates. In S6 which requires at least a willingness to "go along with" the decision this could not be done. For this reason the 30 S6 questions were coded as being consistent if the Vroom-Yetton model included a GII option in the feasible set.

The place of voting was less clear since the vote might be used in different ways by the principal. If the principal believed that a majority vote was binding on him to implement the decision then he was surrendering power over the final decision, which was characteristic of process GII. On the other hand, if principals considered a majority vote as simply an expression of staff opinion of which account would be taken along with other relevant information in assisting the principal to reach a final decision, then power over the final decision had not been surrendered and the decision process, it was decided, should be judged as being similar to process CII (S4 in the present typology).

A third possibility was envisaged. This was that the principal would use the vote to determine staff preference and would only choose not to implement that decision if it was believed that there were compelling reasons for not doing so. A number of principals made the point that if there were constraints operating which might prevent implementation of a majority vote, then it would be unwise for the principal to make use of a voting procedure. However, in determining whether a vote under these circumstances was more appropriately classified as a CII or a GII process it was considered that, since determination of what constituted a compelling reason not to implement the majority view remained with the principal, this process should be classified as being more like a CII than a GII.

The principal questionnaire contained a question which provided the three options listed above. The distribution of responses was as follows: process not used, 6; vote binding on the principal, 18; vote as very strong influence, 8; and vote as additional information, 1.

Many principals made the point that voting was not used or was used only for unimportant issues or those which they considered to be more concerned with the personal preferences of staff members than with quality concerns.

While voting was rated as being an important decision process only six decisions had been made in this way. Of the four principals who had used the method, two considered a vote as binding, the other two perceived it as being a very strong indication of staff opinion. Consideration of this factor together with what processes constituted the feasible set, led to two decisions being rated as inconsistent and the other four as consistent with the feasible set.

Decision Success

Principals were asked to determine whether they considered the decision to be successful prior to asking them to rate the decision on seven point scales. Of the 151 decisions, only 11 were judged to be unsuccessful. The percentage of cases perceived to be successful varied from 86.1 percent for decisions made using the S1 style to 100 percent for the six decisions made using the S5 style. The high rate of perceived success was surprising and had implications for the testing of the validity of the Vroom-Yetton model.

Consistency with the Feasible Set and Decision Success

> Hypothesis 4. Principals perceive decisions consistent with the feasible set to be successful in a greater percentage of cases than decisions which are not consistent.

Vroom and Yetton (1973) reported that, in 65 percent of the 268 cases included in their study, the decision process chosen was consistent with the feasible set. Vroom and Jago (1978:155) reported that 65 percent of the decisions in their study were consistent with the feasible set. In the present study 101 of 151 decisions (66.9 percent) were consistent.

To enable the testing of the above hypothesis, principals were asked to rate their decision as successful or unsuccessful. In only one case was a principal unable to do this. The results were as shown in Table 4.14. The Chi Square value is 3.68 which approaches but does not achieve statistical significance at the 0.05 level. The null hypothesis of no difference therefore cannot be rejected.

Nie et al. (1975:6) noted that: ". . . any dichotomy can be treated as though it was interval level measure and in some cases even a ratio level variable." In view of this it was possible to apply further

Table 4.14

Consistency with the Feasible Set and Decision Success

Outcome	Consistent	Inconsistent	Total
Successful	91	49	140
Unsuccessful	10	1	11
Total	101	50	151
	66.9%	33.1%	

statistical procedures to the data of Table 4.14. Use of the tetrachoric r correlation indicated that this result was significant at 0.01 level with a Z r tet value of 2.88. Though this relationship is significant it is not strong and is in the opposite direction to that hypothesized. Thus, though the null hypothesis of no difference is rejected the research hypothesis cannot be accepted because the direction of relationship is not as hypothesized.

Discussion

Previous similar studies have been reported by Vroom and Yetton (1973:182) and Vroom and Jago (1978). In the former study the cases reported by managers were almost all successful, and no significant relationship was established. Vroom and Jago specified that one successful and one unsuccessful case should be reported and on the basis of that data achieved a positive result. In the present study no estimate of success was possible at the time of the initial collection, for decisions which were being made or had been made but not yet implemented. The high success rate perceived by principals is somewhat surprising but so far as is known there is no similar study with which it can be compared. A possible reason for the result is that principals' perceptions of decision success are not sufficiently discriminating. Such a result might occur if principals were interested in winning the respect of the interviewer. Teacher perceptions of success, however, were also available and results will be reported in Chapter 5. A further possibility was that because all decisions were collected at the same period of the year or because there was insufficient time between the first and second interviews, the reported results are not typical of decision making in schools generally.

Consistency, Success and Decision Process

A statistically significant relationship between consistency with the feasible set and success has been reported. The direction of the relationship, however, is opposite to that hypothesized. To allow fuller investigation of this finding the cases were classified according to both consistency with the feasible set and decision process. The data were as shown in Table 4.15. Because of the large number of small cells, the data were adjusted by omitting process S2, which could not be combined with any other process, and combining process S5 according to the convention established. The revised data are shown in Table 4.16. The results of Chi Square tests for both the data as a whole and for each of the separate processes do not approach statistical significance.

Table 4.15

Decision Process, Success and Consistency

with the Feasible Set (A)

Feasible Set Status & Decision Outcomes	Decision Process							Total
	S1	S2	S3	S4	S5	S6	S7	
Successful								
Consistent	15	1	20	18	4	17	16	91
Inconsistent	16	0	8	7	2	13	2	48
Unsuccessful								
Consistent	4	1	3	1	0	1	1	11
Inconsistent	1	0	0	0	0	0	0	1
Total	36	2	31	26	6	31	19	151

Table 4.16

Decision Process, Success and Consistency

with the Feasible Set (B)

Feasible Set Status & Decision Outcomes	Decision Process					Total
	S1	S3	S4	S6	S7	
Successful						
Consistent	15	20	20	19	16	90
Inconsistent	16	8	8	14	2	48
Unsuccessful						
Consistent	4	3	1	1	1	10
Inconsistent	1	0	0	0	0	1
Total	36	31	29	34	19	149

Discussion

One interesting feature connected with the data of Table 4.15 is the large number of autocratic decisions which were inconsistent with the feasible set and which were considered successful. In the model, the autocratic or S1 process is proscribed either because the leader lacks information or because it is believed that subordinates would not be certain to accept decisions which were made without consultation. Analysis of the 16 S1 cases which were inconsistent indicated that in 11 of these the principal believed that he did not have sufficient information but went ahead with the decision anyhow. It may be, however, that while the principal believed he did not have all of the information he believed also that the knowledge he needed did not reside in his staff, and thus there was little to be gained by involving them. The middle management position occupied by principals may mean that information may be required from their superiors but the model does not appear to allow for this eventuality. This matter will be considered at a later stage.

A second feature of interest was the high number of S6 or S7 cases which were deemed to be successful irrespective of their consistency. It may be that in human service organizations there are reasons why staff acceptance is a more important factor than quality and needs to be weighted in some way. This matter also will be considered at a later stage.

In view of the results reported above there is no support for the hypothesis that decisions consistent with the feasible set are more successful than those inconsistent with the feasible set; in fact, support exists for a contrary hypothesis.

Principals' Rating of Decision Outcomes

> Hypothesis 5. Principals' ratings of decision outcomes exhibit no significant difference between decision quality and subordinate acceptance as predictors of overall effectiveness.

To test this hypothesis, principals were asked to rate their decisions on three criteria: quality, acceptance and overall effectiveness. Seven point scales were used for this purpose. Vroom and Jago had used a similar procedure and reported means of 4.57, 4.60 and 3.87. Because they had specified that one decision should be unsuccessful it was anticipated that their results would be lower than those for this study. Results of the principals' ratings are given in Table 4.17.

Table 4.17

Distribution of Cases by Principals' Ratings of Outcomes

Rating	Quality	Acceptance	Effectiveness
1	1	0	1
2	1	1	0
3	2	1	3
4	9	14	6
5	24	25	31
6	40	51	53
7	74	60	57
Mean	6.11	6.0	6.0

The relationship between principals' ratings of decision quality, subordinate acceptance and overall effectiveness were investigated. The correlation coefficient between quality and overall effectiveness was 0.576 and between subordinate acceptance and overall effectiveness, 0.650.

The distribution of ratings was also classified according to the decision process employed. Results are shown in Table 4.18.

Table 4.18

Mean Principal Ratings of Decision Outcomes
by Process Used in Making Decision

	Decision Process						
Outcome	S1	S2	S3	S4	S5	S6	S7
Quality	5.78	6.50	6.06	6.07	5.83	6.40	6.53
Acceptance	5.56	6.50	5.97	5.74	6.00	6.37	6.58
Effectiveness	5.78	6.50	6.06	5.85	5.67	6.03	6.53

If the results for S2 and S5 where numbers are so small as to make means meaningless are excluded, the data support an hypothesis that decision outcomes are affected by the process used. This possibility was tested in the hypothesis which followed.

Regressing the ratings of overall effectiveness on decision quality and subordinate acceptance produced partial regression coefficients of 0.336 and 0.483 respectively (multiple R = 0.713). These were very much lower than the regression coefficients reported by Vroom and Jago (1978). The R square value for decision acceptance alone is 0.4231. When quality is included the value rises to 0.5083, thus quality accounts for only a little of the unexplained variance. In view of this finding the hypothesis cannot be supported. Ratings of subordinate acceptance are shown to be a substantially better predictor of overall effectiveness than is decision quality.

Consistency with the Feasible Set and Decision Outcomes

> Hypothesis 6. The mean ratings of decision outcomes of decisions consistent with the feasible set as perceived by principals are higher than those of decisions which are not consistent.

More discriminating measures were available to investigate any relationship between consistency with the feasible set and success through use of principals' ratings on the three criteria of decision quality, subordinate acceptance of the decision and overall effectiveness. The results are shown in Table 4.19.

Table 4.19

Mean Ratings of Decision Outcome and Consistency with the Feasible Set

	Decision Criteria		
Consistency	Quality	Acceptance	Effectiveness
Consistent	6.12	5.97	6.04
Not Consistent	6.10	6.04	5.92

Though quality and overall effectiveness show differences in the expected direction, these do not approach statistical significance. The greatest difference between means was associated with overall effectiveness. A "t" test was used to determine whether this difference was significant. The t value was 0.71 and the probability 0.48. In view of this finding, the null hypothesis cannot be rejected and as a result the research hypothesis cannot be supported.

Decision Process, Consistency with the Feasible Set and Principals' Ratings of Decision Outcomes

> Hypothesis 7. Agreement with the feasible set accounts for a greater proportion of the variance between decisions which are consistent with the feasible set and those which are inconsistent than does decision process.

Vroom and Jago (1978) found statistically significant relationships between consistency with the feasible set and decision success. To determine whether this relationship was due to consistency with the feasible set or because decisions consistent with the model tend to be more participative, they used a hierarchical regression technique devised by Overall and Spiegel (1969). This test indicated that for overall effectiveness and decision quality, agreement with the feasible set accounted for the variance which appeared to be due to decision process when the order of entry dictated that decision process should have priority. This finding was not repeated for subordinate acceptance.

The effect of decision process on means of outcomes was tested for all three variables. Statistically significant positive relationships were established between decision process used and ratings of decision quality and subordinate acceptance. This indicated that, as decisions became increasingly participative, ratings of these outcomes increased. This result was not repeated for overall effectiveness.

Categorization of decisions according to both consistency with the feasible set and decision process was performed. Examination of these data showed no consistent pattern. For none of the three criteria were all of the differences in the predicted direction. With respect to overall effectiveness, only in process S1 were the means for decisions inconsistent with the feasible set higher than for decisions which were consistent.

In view of the relationship between decision process and two of the independent variables and the lack of any significant relationship between consistency with the feasible set and decision outcomes, the hypothesis was rejected.

The Decision Rules

> Hypothesis 8. Principals' ratings of decision outcomes are inversely related to the number of decision rules violated.

This hypothesis was tested using the data provided in Table 4.20. Because of the small number of cases in which there were multiple violations, cases in which two or more decisions rules were violated have been grouped. The Scheffé procedure was applied to these data but no two groups were significantly different at the 0.10 level. The null hypothesis could not be rejected and thus the research hypothesis was not supported.

Inspection of the results indicated that for both quality and acceptance marginally higher means were realized for cases in which a single rule was violated. This is contrary to previous tests of the

Table 4.20

Number of Decision Rule Violations and Decision Outcomes

	Quality		Acceptance		Effectiveness	
Violations	Number	Mean	Number	Mean	Number	Mean
0	101	6.12	102	5.12	101	6.04
1	36	6.17	36	6.19	36	5.89
2+	14	5.93	14	5.64	14	6.00

model. It may indicate that some particular factor in the school situation makes one or other of the decision rules inoperative. This possibility will be explored in Chapter 7.

Individual Rule Violations

Since consistency with the model had been found not to be significantly related to decision outcomes, it was clear that there could be no significant relationship between the outcomes and the decision rules collectively since these govern the model. The possibility existed, however, that one or more rules might be inappropriate and thus be affecting the validity of the model, or several rules could be acting in opposing directions. Hypothesis 9 was framed to provide a framework in which these possibilities could be examined.

> Hypothesis 9. Decision rules contribute differentially to decision outcomes as measured by principals' ratings of these outcomes.

All rules do not apply to all cases. The frequency of their application and violation is shown in Table 4.21

Table 4.21

Frequency of Application of Individual Decision Rules and Violations

No.	Factor	Applications	Not Violated	Violated
1	Leader Information	48	36	12
2	Goal Congruence	65	49	16
3	Structure	19	8	11
4	Acceptance	69	59	10
5	Conflict	21	15	6
6	Fairness	2	2	0
7	Acceptance Priority	31	21	10
	Totals	255	190	65

Rules 1, 2 and 3 are designed to "protect" the quality of decisions. It would be expected that in those cases where one or more of these rules was violated that the mean quality of the decisions would be lower than for cases in which the rule was not violated. To permit examination of whether this occurred the data of Table 4.22 were examined.

The data related to leader information indicated a relationship in the hypothesized direction but this failed to achieve statistical significance. Similarly while the direction of relationship for the unstructured problem rule was as hypothesized, the relationship did not approach significance.

Table 4.22

Quality Rule Violations and Quality Ratings

Rule	No Violation (Mean)	Violation (Mean)	t Result	
			Value	Probability
Leader Information	6.111	5.9116	0.55	N.S.
Goal Congruence	5.755	6.5625	-2.96	0.005
Unstructured Problem	6.000	5.6364	0.91	N.S.

The goal congruence or "trust" rule revealed a highly significant relationship but in the reverse direction to that hypothesized, i.e., violation of the rule was associated with the making of decisions of improved quality. This finding invited analysis.

The goal congruence rule applies when a quality decision is involved and when the manager believes that subordinates are not likely to pursue organizational goals. Vroom and Yetton (1973:216) referred to this as the "trust" rule and suggested that the manager should ". . . search for evidence in the problem of a common or superordinate goal or an area of mutual interest." If the leader believed that the subordinates did not share the organizational goals, then GII was eliminated from the feasible set.

The trust rule was investigated by Vroom and Jago (1978:159) who noted that this rule ". . . is unique in the model because it is the only rule in which violations may reasonably be expected to optimize one criterion (subordinate acceptance) but minimize another (decision quality)."

The basis for the reasoning is that by sharing the decision with persons who did not share the organizational goals, quality was threatened. However, in this case, quality was shown to be improved significantly ($t = -2.96$, $p = 0.005$).

There are a number of explanations which might be advanced to explain this anomalous finding. The first is that, in fact, cases in which this rule operated were categorized incorrectly as requiring a quality decision when, in fact, no such requirement existed. The possibility of this happening has already been raised and will be investigated further in Chapter 7. A second possibility is that while a quality requirement did exist, the extra commitment of persons who perceived themselves to have been more involved led to a better result and an after-the-event perception of better quality. A third possibility is that, for professional people, the "superordinate" goals referred to by Vroom and Yetton resulted in a high quality decision even where these were not consistent with their own personal interests. A further possibility is that principals coded this attribute "no" because a small number of staff members were considered to not share the organizational goals. However, by sharing the decision the influence of staff who did share the goals led to decision quality being protected and, in fact, improved through the discussion necessary to gain consensus. Such a result would be consistent with the finding of Heller (1971) that the involvement of subordinates is of critical importance to decision quality. These alternatives will be examined in greater detail in Chapter 7.

In addition to considering the implications of the goal congruence rule on decision quality, analysis was also carried out to determine if subordinate acceptance was also affected. There was a strong relationship between subordinate acceptance and violation of this rule. It was found that if this rule was violated, i.e., if a GII process was used, the mean acceptance was 6.375; if the rule was not violated the acceptance mean was 5.5714. This result is significant (t = -2.65, p = 0.01-2 tailed).

The remainder of the decision rules are designed to protect decision acceptance. Data relating to the rules designed to protect subordinate acceptance appear in Table 4.23.

Table 4.23

Decision Rule Violations and Mean Acceptance Ratings

Rule	No Violation	Violation	t Value	t Probability
Acceptance	6.2167	5.600	2.05	0.044
Conflict	5.7333	5.1667	1.21	N.S.
Fairness	No meaningful result possible			
Acceptance Priority	6.5000	6.3000	0.68	N.S.

All of the above relationships are in the predicted direction. Those relating to conflict and fairness do not reach statistical significance. The data relating to acceptance does reach significance.

In addition to testing the rules for their predicted effect, i.e., on decision acceptance, they were also tested for possible effects on decision quality. The result for the acceptance rule was significant at the 0.03 level. In both other cases the results were in the predicted direction and in the case of the acceptance rule, at a level approaching statistical significance.

Individual Decision Rules and Overall Effectiveness

One of the important assumptions of the Vroom-Yetton model is that overall effectiveness is a product of decision quality and acceptance. There has been support for this contention in this study (multiple R = 0.713 and R square 0.510). While, of themselves, decision quality and subordinate acceptance are important it is the overall effectiveness of the decision that is of major concern. The effect of each of the decision rules on overall effectiveness is shown below.

Table 4.24

The Effect of Decision Rule Violations on Overall Effectiveness of Decisions

Decision Rule	No Violation	Violation	t Value
Leader Information	5.889	5.750	0.45
Goal Congruency	5.996	6.062	-0.82
Unstructured Problem	5.875	5.909	-0.11
Acceptance	6.085	5.900	0.59
Conflict	5.800	6.000	-0.42
Acceptance Priority	6.190	5.900	0.74

None of these values is statistically significant.

Summary

Analysis of the effects of all rules has been carried out. Only two statistically significant results were found to exist. In the first (Table 4.22) a relationship between decision quality and the goal congruence rule was established but this was in the reverse direction to that hypothesized. The second statistically significant relationship established (Table 4.23) was between the acceptance rule and ratings of subordinate acceptance.

No significant relationship between any of the rules and overall effectiveness was established. This finding is different from that reported in the Vroom and Jago (1978) study. Possible reasons for this difference will be investigated in Chapter 7.

In view of these results the null hypothesis that the decision rules exert no influence on decision outcomes was rejected and the research hypothesis of differential contribution by different rules accepted.

Discussion

In the interviews it appeared that both decision quality and subordinate acceptance tended to be looked at in what might be described as an abstract way. Principals tended to think aloud and made such comments as, "Well, I had a lot of information and the decision was consistent with it so I suppose I should rate it high." When overall effectiveness was being assessed, however, effectiveness was seen as being compared with some theoretically optimal solution rather than whether, given the resources available, the best feasible solution had been decided upon. This tendency, as well as being reflected in principals' comments was also reflected in the lower values assigned to overall effectiveness as compared with the other two decision outcome ratings.

SUMMARY

Of the hypotheses examined in this chapter those relating to decision making generally have been supported. The hypotheses dealing with the Vroom-Yetton model, however, were not supported by analysis of the data. Some possible reasons for this have been postulated but further consideration of these matters has been postponed pending examination of the data provided by teachers.

Chapter 5

ADMINISTRATIVE DECISION MAKING IN SCHOOLS AS PERCEIVED BY TEACHERS

The purpose of this chapter is to report results of the analysis of data from the teacher questionnaire (Appendix E).

Some direct comparison of frequencies of teacher responses with those provided by principals will also be undertaken. Testing of seven hypotheses is included. These cover teachers' perceptions of the frequency of use of the various decision processes in schools, and matters relating to teacher involvement in school decision making. Also reported are differential teacher perceptions of decisions made, the results of these on ratings of decision outcomes and teachers' perceptions of how they would act if they were placed in the principal's role.

TEACHERS' GENERALIZED PERCEPTIONS REGARDING ADMINISTRATIVE DECISION MAKING

Both generalized perceptions of administrative decision making and information in regard to a specific case were collected from teachers. The results of the generalized perceptions are reported in this section.

Teachers' Perceptions of Decision Processes Used in Administrative Decision Making

Hypothesis 10. Teachers perceive decision processes additional to those specified in the Vroom-Yetton model to be used in schools.

Brief descriptions of the seven decision processes used in this study were given on the questionnaire form, and teachers were asked to indicate their perceptions of the frequency of use of each decision process on five-point scales. If a process was not perceived to be used, teachers were instructed that the process was to be scored zero. A summary of responses is provided in Table 5.1.

Table 5.1

Distribution of Perceptions of Frequency of Use of Each of Seven Decision Processes

	Decision Process							
Rating	S1	S2	S3	S4	S5	S6	S7	Total
Not Used	15	16	19	9	3	15	15	92
1	136	94	39	20	28	46	102	465
2	138	151	76	58	56	84	78	641
3	70	72	114	104	88	84	83	615
4	18	42	112	132	133	112	76	632
5	7	9	24	62	77	44	31	254
Total N	384	384	384	385	385	385	385	
Mean	1.90	2.15	2.87	3.34	3.43	2.94	2.51	2.79
Median	1.80	2.04	3.01	3.51	3.63	3.07	2.47	2.85

There are a number of interesting features concerning the distribution shown in Table 5.1. The first is the low ratings given to the S1 style with 75 percent of teachers rating it two or less. A second interesting feature is that the perceived frequency of use of processes S1 to S5 as indicated by median scores is directly related to the degree of participation. The perceived importance of the S5 or voting process is also notable; teachers perceive it to be the most frequently used process. The Vroom-Yetton model, however, does not include this style in the taxonomy of decision processes. There is some support from these data for Heller's contention (1971) that superiors invite participation but not at the cost of surrendering control over the decision since S3 and S4 which have this characteristic are perceived as being frequently used; however, the high ratings given to S5 and S6, both of which move the locus of control of the decision to subordinates, provides countervailing evidence. In summary, it appears that teachers perceive schools to be organizations in which decision making is predominantly consultative, in the schools in this sample.

The very high ratings given by teachers to decision processes S5 and S6, neither of which is included in the Vroom-Yetton categorization of processes, indicates that the model does not provide an adequate taxonomy for school administrative decision making and provides strong support for the hypothesis that additional processes need to be added.

Comparison of Teacher and Principal Perceptions of Frequency of Use of Decision Processes

Teachers gave higher ratings to all the decision processes (grand mean 3.0) than principals (grand mean 2.4). In order that comparisons might be made more readily, the principals' median ratings were scaled by multiplying the principals' median ratings by a factor such that the sum of both teacher and principal medians were equal. The results of the scaled data are reported in Table 5.2.

Table 5.2

Frequency of Use of Decision Processes: Comparison of Teacher and Principal Perceptions

	Decision Process						
Source of Data	S1	S2	S3	S4	S5	S6	S7
Teacher (Median)	1.80	2.04	3.01	3.51	3.63	3.06	2.47
Principal (Median)	3.40	1.76	3.32	3.75	2.92	2.48	1.89
Teacher Ranking	7	6	4	2	1	3	5
Principal Ranking	2	7	3	1	4	5	6

Substantial differences between the perceptions of the two groups are apparent. The most striking difference is that regarding the use of process S1. Teachers perceived it to be the least used process while principals perceived it as being frequently used. A possible reason for this discrepancy is that principals were asked to consider the whole range of administrative decisions which they were called upon to make in rating the styles. Many decisions which principals make using the S1 style might involve matters with which teachers have little familiarity. Such matters might involve issues between the principal and the school board, the school district administration, provincial authorities or parents.

A second important difference is in the perceived use of decision style S5; ranking on the basis of principals' responses places it in only fourth place while teachers perceived it to be the most frequently used process.

Perceptions of Decision Styles Used and Teacher Characteristics

Though no hypotheses were formulated regarding teacher characteristics and perceptions of frequency of use of different decision processes, the literature had revealed that writers such as Ilgen and Fujii (1978) believed that different ratings by different teachers might not arise solely from different perceptions but might also indicate that there were, in fact, different decision processes used with different sub-groups of teachers or in schools where the staff shared certain characteristics. In making decisions which had implications for senior teachers, principals might use different processes than were used when the whole staff was affected or where the decision had implications for a group of inexperienced teachers. If, in fact, this was the case it should be reflected in significant differences in the perceptions of frequency of use of decision processes by different sub-groups of teachers. Logically, it might be expected that principals would use more participative styles with experienced teachers where, in Heller's terms (1971:xvii), the manager's perception of the skill differences between himself and his subordinate were perceived to be small. According to Heller, "Where these (skill differences) are perceived to be large, centralized decision styles tend to be used." The first aspect to be investigated dealt with total teaching experience and perceptions of the frequency of use of the various decision styles.

Cross tabulations were performed using teaching experience as the independent variable and perceived frequency of use of each of the decision processes as dependent variables. As with the principals, ratings of perceived frequency of use were treated as being at ordinal level.

Experience in the school and sex of respondent were also used as independent variables, and the possibility of significant relationships between them and frequency of use of each of the decision processes was investigated. While none of the independent variables was related to frequency of use for all decision processes, a number of statistically significant relationships were found to exist. These are summarized in Table 5.3.

Table 5.3

Relationships between Teacher Characteristics and Perceived Use of Decision Styles

Independent Variable	Dependent Variable	Chi Square	Significance	Direction
Teaching Experience	S2	36.55	0.013	-ve
	S6	30.87	0.053	+ve
Experience in School	S5	35.63	0.002	+ve
	S6	30.83	0.009	+ve
Sex	S2	20.73	0.001	
	S3	13.09	0.022	
	S5	18.74	0.002	
	S7	13.73	0.017	

Examination of this table reveals that experienced teachers perceived process S2 to be used significantly less than inexperienced teachers. Whether this difference reflects differing perceptions or provides evidence of differential treatment cannot be stated. However, principals might be expected to seek information rather than opinion from inexperienced teachers but in consulting individually with experienced teachers might be expected to seek opinion as well as information. The direction of the relationship is consistent with this possibility.

Differing perceptions of the frequency of use of decision process S6 are also consistent with the possibility of differential treatment of staff according to experience. The process requires principals to surrender control, though not necessarily substantial influence, over the decision to subordinates. While a principal is unlikely to be willing to do this if a significant number of the staff are inexperienced, it is conceivable that with an experienced group there would be greater willingness to surrender control. Again, the direction of relationship with experienced staff perceiving greater use of this style is consistent with the possibility raised.

The findings relating to experience in the school and the use of decision processes S5 and S6 are also consistent with an hypothesis of differential treatment according to experience in the school. A principal might be more likely to surrender control over decisions to persons who had been in the school for a substantial period and who would thus be familiar with the context in which the decisions were undertaken than with teachers who had only recently taken up duties in the school.

The perceived differences according to sex could not be assigned a direction but it was observed that in respect of process S2 more males gave high ratings to this process than would be expected whereas fewer females than would be expected gave high ratings. The interpretation is that males perceive this process to be used significantly more than it is perceived to be used by females. Given that this is a low involvement process the inference would be that females perceive school decision making to be significantly more participative than it is perceived to be by males. Similar analysis of other decision processes confirmed the direction of relationship indicated by process S2.

Statistically significant differences in perceptions of frequency of use of different decision processes were also found to be related to sex differences for decision processes S5 and S7 (Table 5.5). In both cases, it was found that more males than females gave low ratings to these responses than would have been expected, while fewer gave high ratings. This finding reinforced the earlier indication that males perceive school decision making to be less participative than it is perceived to be by females.

Perceived Use of Decision Processes and Type of School

While there was strong statistical support for the proposition that sex differences were associated with different perceptions of frequency of use of decision processes, the possibility existed that the differences might be indicative of a factor other than sex. Analysis of the sex distribution of teachers in the sample indicated that while the ratio of females to males in elementary schools was of the order of 3:1, there were fewer female than male respondents in secondary schools. If elementary schools differed significantly in the degree of participation of teachers in decision making from that of secondary schools, the differences which were apparently related to sex differences might in fact be attributable to these different distributions. An analysis was performed using level of schooling provided as the independent variable and perception of frequency of use of decision process as the dependent variable. The results, for each of the separate processes, appear in Table 5.4.

Table 5.4

Relationship Between Type of School and Use of Decision Processes

Decision Process	Chi Square	Significance
S1	21.10	0.001
S2	30.72	0.001
S3	39.39	0.001
S4	13.75	0.010
S5	43.36	0.001
S6	17.77	0.010
S7	34.56	0.001

To establish the direction of these relationships, the median rates for each of the decision processes for males and females in elementary and secondary schools were calculated. It was reasoned that low levels of participation in decision making would be reflected in higher ratings for the less participative processes S1 - S3 and lower ratings for the higher participation processes S5 - S7. The data are shown in Table 5.5.

Table 5.5

Median Ratings of Frequency of Use of Decision Processes as Perceived by Sub-Groups of Teachers

	Elementary		Secondary	
Process	Male	Female	Male	Female
S1	1.76	1.66	2.17	2.15
S2	2.35	1.82	2.00	2.33
S3	2.86	2.96	3.64	3.32
S4	3.58	3.57	3.00	3.59
S5	3.79	3.98	2.86	3.25
S6	3.62	3.46	2.84	2.53
S7	2.91	3.05	1.66	2.14

Analysis of this table indicates that elementary school teachers perceive their schools to be more participative than teachers in secondary schools. This is indicated by the lower ratings assigned to processes S1 and S2 by elementary school teachers and by the same groups' high perceived frequency of use of S5 - S7 all of which are participative, group processes. All groups perceive S4 to be a frequently used process. Elementary school teachers perceive S5 to be the most frequently used process; secondary school teachers perceive processes which do not require the principal to surrender control over the decision to be the most frequently used processes.

Comparisons were also made between teachers of the same sex in elementary and secondary schools to determine if the relationships between frequency of use of various decision processes and type of school were equally strong for both male and female teachers. This analysis showed significant differences in perceptions between males in elementary and secondary schools in respect of three processes: S3, S5 and S7. Significant differences in perceptions of frequency of use for all processes were found for female teachers. This might suggest that there is a significantly different role for female teachers in secondary schools than they occupy in elementary schools. It would appear that female teachers in elementary schools perceive themselves to have significant roles in the decision making process; female teachers in secondary schools, however, perceive a significantly greater number of decisions to be made by processes which are not participative, while perceiving the less frequent use of processes which are more participative.

> Hypothesis 11. Teachers perceive themselves to be less involved in administrative decision making than they wish to be.

Teachers were asked to indicate their perceptions of their present degree of involvement in administrative decision making and also the degree of involvement they desired, measured on five-point scales. The data are shown in Table 5.6.

A "t" test applied to the means gave a value of -12.1. The probability associated with such a value is less than .001. While there may be argument as to whether involvement scores are at the interval level, the differences in both other measures of central tendency do indicate that teachers perceive themselves as being less involved in administrative decision making than they wish to be, that is, the result supports the hypothesis.

Cross tabulations were performed to investigate further the

Table 5.6

Distribution of Frequencies of Perceived Present Involvement in Decision Making and Desired Level

Rating	Present Involvement		Desired Involvement	
	Frequency	Percent	Frequency	Percent
1	42	11	9	2
2	77	20	18	4
3	128	33	133	35
4	101	26	156	41
5	35	9	67	18
Median	3.026		3.702	
Mode	3.0		3.0	

relationship between perceived present involvement and desired level of involvement. It was found that for 190 of the 383 respondents the perceived and desired ratings were in agreement. Of the remainder, only 22 desired less involvement while 171 desired more involvement. Ninety-five of the latter sought an increase of only one unit on the rating scale. This group might be regarded as being marginally under-involved. A two unit increase was desired by 57 teachers; these might be considered to perceive themselves as being quite significantly under-involved. The 19 persons who sought increases of three or more units might be considered to perceive themselves as being quite strongly "decision deprived" (Allutto and Belasco, 1972).

Comparison of the principal and teacher data for this item reveals that the mean of principal ratings of present teacher involvement was 3.7 whereas the mean of teachers perceptions was 3.03. The desired level of teacher involvement closely approaches the value that principals perceive to exist, namely, 3.76 compared with 3.70.

There is thus strong support for hypothesis 11 that teachers are less involved in decision making than they wish to be.

Differential Desires by Teachers for Participation in Decision Making

While observations in the school setting indicated that there were significant differences in the desire for involvement of individual teachers, the possibility of differences being related to such factors as teaching experience, length of time in the school and sex had been indicated in the literature and investigation of such relationships was undertaken.

> Hypothesis 12. There are significant differences in the desire of teachers for involvement in administrative decision making, and these differences are related to sex and teaching experience differences.

To test for the possibility that desires for increased involvement were group specific, several discrepancy analyses were performed. These analyses were based on the discrepancy between the perceived present and desired degree of involvement. The analysis was, thus, concerned with differences not absolute scores on these variables. The implicit null hypothesis was that there would be no significant differences between different groups. Whether observed differences were significant was determined by the application of "t" tests to the data.

The first discrepancy analysis performed used sex as the basis for discrimination. It was found that the discrepancy between desired and perceived involvement was significantly greater for males than females. The results are shown in Table 5.7.

Table 5.7

Discrepancy Between Desired and Perceived Present Involvement in Decision Making According to Sex

Sex	Discrepancy Mean	F Value	Probability	t Value	Probability
Male	0.8092	1.44	0.15	2.29	0.03
Female	0.5410				

A second analysis was based on the length of teaching experience. The results appear in Table 5.8.

The Scheffé procedure was used to compare pairs of means, and groups 2 and 5 were found to be significantly different at the 0.10 level. As pointed out by Ferguson (1971) the Scheffé procedure is a rigorous one, and significance levels of 0.10 are customarily used with this procedure rather than the more usual 0.05 level.

As can be seen from the data in Table 5.8, the discrepancies are not linear with experience. In this sample, teachers with between two and four complete years of experience demonstrated the greatest discrepancy. A second high discrepancy group were those with eight to ten years of experience. The reasons for these variations must remain a matter

Table 5.8

Discrepancy Between Desired and Perceived Involvement in Decision Making Among Teachers in the Sample

Group	Years of Experience	Discrepancy Mean	Ranking	N
1	1	0.6111	3	36
2	2 - 4	0.8642	1	81
3	5 - 7	0.5775	4	71
4	8 - 10	0.8197	2	61
5	More than 10	0.4320	5	125
Total		0.6337		

F = 2.813   F probability = 0.0253

for conjecture as must the question of whether the differences are due to different perceptions or to actual differences in the degree to which principals involve teachers with different amounts of teaching experience in the decision making process.

Irrespective of these factors, there appears to be strong support for the hypothesis that there are significant differences in the desire of teachers for involvement in administrative decision making and that these differences are related to the sex of teachers and to experience factors.

TEACHERS' PERCEPTIONS CONCERNING SPECIFIC CASES OF DECISION MAKING

As well as investigating perceptions of decision making generally, the teacher questionnaire also focussed on the same specific cases as had been described by the principals. Very brief descriptions of the cases were provided to teachers and questions were asked relating both to decision process as well as outcomes.

Decision Process Used

Both principals and teachers had been asked to select, from the seven decision styles used in this study, the one closest to that used in making the decision. It was expected that there would not be perfect correspondence between teachers and principals on this matter. The results appear in Table 5.9.

Table 5.9

Perceptions of Use of Decision Processes - Case Data

	Decision Process							
Respondent	S1	S2	S3	S4	S5	S6	S7	Total
Principals								
Frequency	36	2	31	27	6	30	20	152
Percent Use	24	1	20	18	4	20	13	100
Teachers								
Frequency	21	27	85	74	59	63	34	363
Percent Use	6	8	23	20	16	17	9	99

Analysis was also carried out to determine if there were differences between teachers as to the process used in making the decision in each separate case.

> Hypothesis 13. Different teachers ascribe different decision processes to the same decision.

If teacher data had been available for all cases from three respondents and if there had been perfect agreement between the three respondents in each case, all answers could have been grouped into seven sets according to the agreed decision process used. In fact, the 89 cases to which three responses were received fell into 47 categories. There was agreement between all three respondents in only 11 cases. Principals had perceived the S1 process to be used on 36 occasions. In no case did all three teachers agree that this process had been used. The process over which there was greatest agreement was S5 in which four groups of three teachers agreed that a voting process had been used. However, inspection of the principal's perceptions of how the decision was made indicated that in only one case had the process about which teachers were in agreement also been perceived by the principal to have been decided by use of the S5 process.

In 54 cases, including some in which only two responses were received, two respondents perceived the same process to have been used. Comparison of the perceived process which the principal believed was used with those cases in which two or more teachers perceived the same process to be used indicated that of 65 cases, in only 21 instances did the perception of the majority of teachers and the principal agree.

Of the cases in which two or more teacher responses were received, discrepant perceptions of decision process used were observed in

105 cases and similar perceptions in only 22 cases. A single response was received in a further 19 cases.

Some differences in perception of decision process used were anticipated. Discrimination between some processes requires fine judgements; for example, the S2 and S3 processes both involve individual consultation between principal and teacher and responsibility for the decision in both cases rests with the principal. The main differences between them lies in whether the principal "shared" the problem; that is, whether he explained what the problem was and whether information only or information and opinion was sought. Different teachers might be approached in different ways or might recall the process used differently from others. Similarly, processes S6 and S7 are only marginally different, and confusion between them was not unexpected; however, the frequency of the discrepancies and the distance apart on the continuum of participation of perceptions was unexpected.

Perhaps the most visible of the decision processes is the voting mode since there is a clear culmination to the information gathering and consideration stage, and as a result a high degree of agreement about use of the voting process would be expected. However, there was little agreement in perception of process used even on this process. Perhaps the next most visible decision process is the S1 where there is no consultation prior to the decision being made, and yet process S1 was perceived by some as being the process used where other teachers perceived processes S6 or S7 being used.

These differences may be explained in part by Ilgen and Fujii's (1978) claim that principals do involve teachers differentially, in part to the long time lapse between making the decision and collecting the perception of decision process used and, perhaps, in part to lack of concern by teachers with the decision process used.

In view of the above evidence, however, it can be affirmed that teachers do perceive the decision processes used by principals to differ substantially, and the hypothesis that there will be such differences can be confidently supported.

The Effect of Differences in Perceptions of Decision Process Used

The Vroom-Yetton model is based on the assumption that overall effectiveness is a product of decision quality and subordinate acceptance. The model is designed to protect decision quality by specifying a process which allows the necessary information to be generated. Thus, while decision quality is dependent upon the process used, quality is not perceived to have a linear relationship with the degree of participation. Subordinate acceptance, on the other hand, is perceived to be directly related to the degree of subordinate participation in decision making, and this degree is dependent upon the decision process used. Since different teachers perceived different processes to be used, it was possible to test one of the basic assumptions of the model, namely, that subordinate acceptance is dependent upon the degree of subordinate participation. Acceptance in turn, it is assumed, affects the perceived overall effectiveness of the decision. The purpose of hypothesis 14 was to test these assumptions.

> Hypothesis 14. Teachers who perceive themselves to have been involved in more participative decision processes than their colleagues will perceive decisions to have greater subordinate acceptance and greater overall effectiveness.

Application of a Chi square test to these data gave highly significant results for both subordinate acceptance and overall effectiveness. These results which are reported in Table 5.10, allowed rejection of the implicit null hypothesis that there was no difference in decision outcomes associated with the use of different decision processes.

Table 5.10

Relationship Between Decision Process Used and Teacher Ratings of Outcomes

	Test Results			
	Chi Square		Kendall's Tau	
Decision Outcome	Value	Significance	Value	Significance
Acceptance	69.30	0.007	0.205	0.0000
Effectiveness	56.70	0.0155	0.174	0.0000
Quality	83.48	0.0000	0.217	0.0000

While decision processes lie along a continuum of subordinate acceptance and are therefore at the ordinal level, the intervals are not claimed to be equal, and thus it was not appropriate to use Pearson product-moment correlations as a measure of association. Because a fairly large number of cases were classified into a fairly small number of categories, Kendall's tau was used in preference to Spearman's rho test. The results are also shown in Table 5.10. In view of these results there is confident rejection of the null hypothesis and acceptance of the research hypothesis.

While decision quality was not included in the hypothesis, the same tests were applied to this outcome. The results are as strong for this outcome as for subordinate acceptance and overall effectiveness. This relationship is not explained by the Vroom-Yetton assumptions but is consistent with Heller's (1971) contention that increased subordinate participation positively affects decision quality as well as subordinate acceptance.

Discussion

The above results provide support for the basic assumptions of the Vroom-Yetton model. The importance of different perceptions of the same event also lend support to writers of the human relations school who postulated that it was perceived involvement rather than actual participation which determined participant acceptance. The finding also lends support to such "universalists" as MacGregor (1944), Blake and Mouton (1964) and Likert (1967) who proposed that maximal subordinate participation, or at least subordinate perception of such participation was justified irrespective of other situational factors.

Relative Importance of Quality and Acceptance in Determining Decision Outcomes

> Hypothesis 15. In the perception of teachers, there is a stronger correlation between subordinate acceptance and overall effectiveness than between decision quality and overall effectiveness.

As has been mentioned, central to the Vroom-Yetton model is the assumption that the overall effectiveness of decisions is a product of the quality of decisions and subordinate acceptance. The hypothesis was formulated on the assumptions that, firstly, teacher acceptance would be perceived by teachers to be the most important element in determining whether or not a decision was effective and, secondly, that teachers would be better able to judge acceptance than decision quality.

The ratings of overall effectiveness were regressed on decision quality and decision acceptance. Partial regression coefficients of .48 and 0.42 respectively were obtained, the multiple R being 0.80. The high degree of overlap between the two variables is indicated by the result that the R^2 value for decision quality alone was 0.56 but the value for decision quality and subordinate acceptance taken together was only 0.66.

On the evidence provided, decision quality is a better predictor of overall effectiveness than is subordinate acceptance and the hypothesis must therefore, be rejected.

It is of interest to note that these values are similar to those cited by Vroom and Jago and are substantially higher than those resulting from the principal data. This result might raise the question of whether principals and teachers use similar criteria in judging the overall effectiveness of decisions.

Perceptions of Decision Outcomes

A number of writers including Heller (1971) have quoted research which indicates that subordinates tend to rate the success of decisions made by their superordinate less highly than the superordinate's self rating. This led to the formulation of the hypothesis which follows.

> Hypothesis 16. The mean ratings of decision outcomes as perceived by teachers are lower than those of principals.

Table 5.11

Differences Between Principal and Teacher

Ratings of Decision Outcomes

	Mean Ratings		t Test Result	
Outcome	Principals	Teachers	Value	Significance
Quality	6.113	5.489	5.37	0.0000
Acceptance	6.000	5.468	4.75	0.0000
Effectiveness	6.000	5.440	5.09	0.0000

These results allow rejection of the implicit null hypothesis that there is no difference between the ratings of the two groups and permits acceptance of the research hypothesis that teachers' ratings of decision outcomes are lower than the ratings provided by principals.

Teachers as Decision Makers

Teachers were asked to identify the process they would have used if they had been faced with the same decision situation as that faced by the principals.

> Hypothesis 17. Where teachers disagree with the process they perceive the principal to have used, they claim that they would use a more participative process.

Of the 362 teachers who responded to this question, 240 or 66 percent indicated they would have used the same process as that chosen by the principal. Of the remaining 123, 22 claimed they would have used a less participative process than that which was used, five suggesting that voting might have been used in preference to an S6. It is of interest to note that not one teacher suggested the use of an S1 process in preference to one of the more participative processes. One hundred and one teachers claimed that they would have used a more participative process than that perceived to have been used by the principal. Of these, 33 would have used a process one step further along the participative continuum, e.g., an S3 rather than an S2, and 27 selected a process two steps removed.

The imbalance of those who indicated they would use a more participative process with those who identified a less participative process is reflected in the median scores. The median for perceived process used was 4.155 and the median score for process preferred was 4.869. On the basis of the results presented there is strong support for the hypothesis that where teachers do not agree with the decision process used by the principal they will claim that they would use a more participative process.

It was hypothesized that if teachers were satisfied with the process used this satisfaction would be reflected in their ratings of decision outcomes. Further, it was also hypothesized that those who believed a less participative process was used than was desired would be least satisfied and this would be reflected in their ratings of decision outcome. To test whether, in fact, this occurred respondents were divided into three groups. Group one were those who believed the decision process was appropriate, group two the small group who believed that a less participative process should have been used and group three those who believed a more participative process would have been more appropriate. The groups were then compared on each of the decisions as shown in Table 5.12.

Table 5.12

Agreement Between Decision Process Used and Decision Outcomes

Group	Number	Decision Outcomes (Means)		
		Quality	Acceptance	Effectiveness
Group 1 (no change)	237	5.89	5.84	5.84
Group 2 (less participation)	22	5.32	5.41	5.23
Group 3 (more participation)	101	4.59	4.62	4.55

Scheffé procedure analysis shows significant differences (0.10) between both groups one and three and two and three in respect of decision quality, and acceptance and between groups one and three, two and three and one and two for overall effectiveness. Based on these results two generalizations may be made. The first is that choice of a decision process which is considered appropriate by subordinates is significantly related to perceptions of the overall effectiveness of decisions. The second generalization is that where teachers perceive the decision process used to be inappropriate, those decisions made by more participative processes than teachers consider optimal receive significantly higher ratings on all decision outcomes than those made by processes which are perceived to be less participative than is considered optimal.

SUMMARY

Administrative decision making in schools as perceived by a relatively large number of teachers has been examined. This investigation revealed quite wide discrepancies between the perceptions of principals and teachers as well as disclosing some areas of agreement.

Teachers, like principals, perceived that processes additional to those contained in the Vroom-Yetton model were used in schools. Differing perceptions of frequency of use of decision processes among teachers was found to be related to such teacher characteristics as sex, teaching experience and length of service in the school. These differences were consistent with an hypothesis of differential involvement of different sub-groups in school decision making.

Compared with principals, teachers perceived school decision making to be more participative. A majority of teachers were satisfied with their present level of involvement in decision making but, of those who were not, almost 90 percent favoured increased involvement.

Variation in teachers' perceptions of the decision process used in making the same decision was revealed. A significant positive relationship between the success of decision outcomes and the degree of participativeness was established.

Perhaps predictably, teachers rated decision outcomes lower than did principals and, where differences occurred, indicated that, as principals, they would have acted more participatively.

As a result of the investigation described in this chapter it appears that if use of the Vroom-Yetton model required schools to become more participative than they are, this would be acceptable to teachers.

Chapter 6

ADMINISTRATIVE DECISION MAKING IN SCHOOLS AND THE VROOM-YETTON MODEL

The major purpose of this chapter is to determine the utility and validity of the Vroom-Yetton model for selecting decision processes in schools. In Chapter 4, principal data alone were analyzed and no significant relationship between compliance with the model and decision success, decision outcomes as measured by seven-point scales or decision rule violation and outcomes was found. In fact, there appeared to be some support for a contrary hypothesis. In this chapter, teacher perceptions of decision process used, decision success, and ratings of decision outcomes are used together with the principals' perceptions of decision attributes to test whether significant relationships exist between compliance with the model and decision success or decision outcomes.

COMPARISON OF TEACHER AND PRINCIPAL DATA

Decision Success

Teachers were asked the question, "Do you consider that the decision that was made in the above case was a successful one?" Of the 367 answers to this question, 324 or 88.3 percent were positive, compared with 92.7 percent of decisions considered successful by principals. In total, principals had considered 11 decisions to be unsuccessful while one or more teachers considered 37 decisions to be unsuccessful. However, in only one case did all three teachers consider a decision to be unsuccessful.

The possibility that perceptions of decision success were related to school or teacher characteristics was examined but no statistically significant relationships were perceived to exist.

Teachers' Perceptions of Decision Attributes

Unlike a similar research by Yetton (1976), this study did not seek teachers' perceptions of all decision attributes for reasons described in Chapter 3. The one exception was in regard to the question, "If I were to make the decision by myself, am I reasonably certain that it would be accepted by my subordinates?" It was believed that teachers were in an excellent position to answer this question and that their answers would provide both an indication of the accuracy of principals' responses as well as data to answer one of the hypotheses.

> Hypothesis 18. Principals perceive a higher degree of subordinate acceptance of the principal making the decision without subordinate participation than is granted by teachers.

Clearly the question could not be asked in the same form as it was posed in the model. As an alternative, suitable for use by teachers, the question was phrased, "Would you have been quite willing for the principal to have made this decision without consultation?"

In the model, the question is asked in all cases where decision acceptance by subordinates is considered important for effective implementation. In only 19 cases had principals answered "no" to the acceptance question and, as a result, the prior probability question had been asked in 133 cases. The principal had answered "yes" in 46.6 percent of these cases signifying that principals believed that subordinates would willingly accept their decision without consultation. All teachers were requested to answer this question as it applied to the case with which they were concerned. Of the 369 respondents, 293 or over 79 percent answered negatively. If just those cases in which the model required the principal to respond to the question were considered, 256 or 77.8 percent of respondents answered negatively while only 66 answered positively. It is of interest to note that in those cases where the prior probability attribute was not involved because principals had considered subordinate acceptance unimportant, 74 percent of teachers did not willingly concede the principal the right to make an autocratic decision.

In view of the wide discrepancy in the results (46.6 percent compared with 77.8 percent) the null hypothesis was rejected and the research hypothesis accepted.

It may be appropriate to consider two implications arising from the different perceptions of teachers and principals. The first is the effect of a wrong perception of this attribute by a principal. If the question is answered "yes," the effect, in almost all cases, is to include in the feasible set autocratic processes which would otherwise be excluded. Since in over 30 percent of cases principals responded inappropriately, according to the teachers whose reactions were being predicted by principals, the effect was to make it possible for many autocratic decisions to be considered as being consistent with the feasible set. Analysis, however, revealed that only two cases which were unsuccessful and consistent with the feasible set would become inconsistent if the attribute had been answered in the way indicated by a majority of the teachers' responses to the question. The apparently inappropriate responses do nothing to explain the major source of discrepancy in the model so far as principals ratings are concerned, namely, the large number of successful decisions which have been made using the S1 process when this process was inconsistent with the model.

The second major implication concerns the accuracy of the responses to the attribute questions generally. If the principals' perceptions of staff reaction were so discrepant on this question, it seems at least possible that three other questions in which the responses required a prediction of staff reaction might also be subject to error. These three questions - the goals congruence question, the acceptance question and the conflict question - all require judgements to be made of how teachers will react in different situations. If the ability of principals to judge these situations is no more successful than was the case in the prior probability question, this would have implications both for the testing of the model in this study and the possible implementation of the model as an aid to decision making.

Teachers' and Principals' Perceptions of Use of Decision Processes

Haire, Ghiselli & Porter (1966), reporting an international study, noted that the feature most common to managers in many countries was a belief in the efficacy of participative management. Principals, as managers, may share this belief and they are thus likely both to overestimate their overall use of participative processes and perhaps, in reviewing specific decisions, believe that they are using a more participative process than they are perceived to use by teachers.

Hypothesis 19. In respect of administrative decision making generally, principals perceive themselves to use more participative decision processes than they are perceived to use by teachers.

To test this hypothesis required consideration of two discrete sets of data. The first has been reported separately in Table 5.2. This table indicates that principals rate almost all processes lower than they are rated by teachers and allowance must be made for this in comparing the responses. To facilitate the comparison of scores, principals' scores were scaled by multiplying the mean and the median by separate factors such that the total of each was equal to the total of the similar teacher measure. The results are reported in Table 6.1.

Table 6.1

Comparison of Teachers' and Principals' Perceptions of Frequency of Use of Decision Processes - Adjusted Data

	Decision Process						
Source of Data	S1	S2	S3	S4	S5	S6	S7
Teacher (median)	1.80	2.04	3.01	3.51	3.63	3.06	2.47
Principal (median)	3.40	1.76	3.32	3.75	2.91	2.48	1.89
Teacher (mean)	1.90	2.15	2.87	3.34	3.43	2.94	2.51
Principal (mean)	3.18	2.48	3.15	3.46	2.55	2.55	2.24

A "t" test applied to each of the separate adjusted means indicated that the only statistically significant differences between teachers and principals' ratings in respect of perceived use of process was with respect to S1 ($t = -5.28$, significance < 0.001) and S5 ($t = 2.04$, significance < 0.05). The negative value associated with the S1 result indicated that principals perceived this process to be used more than teachers perceived it to be used.

Comparison of the median scores indicated that principals perceived themselves to use processes S1, S3 and S4 more than they were perceived to use these processes by their subordinates. The difference was greatest for S1 indicating that principals perceived themselves to have used this process much more than its use was perceived by teachers. Since this is a low involvement process, this particular process does not support the hypothesis. It has been suggested previously that processes S3 and S4 may be regarded as transition processes between those which might be perceived as autocratic and those perceived as participative. In both cases principals perceived these to be used slightly more than they were perceived to be by teachers. The high involvement processes S5 - S7 were all perceived by teachers to be used substantially more than they were perceived to be used by principals which contradicts the hypothesis. The results for process S2 do not show the same relationship as those for other processes. Teachers perceive principals to use this process more frequently than principals believe it is used. As pointed out previously the difference between S2 and S3 is small and teachers may not perceive the decision to have been shared when it had been the principal's perception that this had been done. However, with this one exception there is no support for the hypothesis that principals perceive themselves to use more participative processes than they are perceived to use by teachers and, in fact, evidence to support the contrary position has been presented.

Subordinate Influence on Decision Making

Heller (1971) reported that subordinates consistently overestimate the amount of power they exert over the making of decisions. To test whether this was present in the making of decisions in schools, the following hypothesis was generated and tested.

> Hypothesis 20. Teachers perceive themselves to have more influence on the making of specific decisions than they are perceived to have by principals.

The amount of influence which teachers have on a decision is dependent upon the decision process used. Teachers and principals both indicated the processes they had perceived to be used in making the 152 decisions; these data appear in Table 6.2.

Inspection of the data reveals three major discrepancies in perceptions. The greatest of these concerns decision process S1 which principals perceived themselves to have used more frequently than any other process whereas teachers perceived it as the least frequently used process. The second major discrepancy concerns the number of decisions made using an S5 or voting style. Teachers perceive this style to be used much more frequently than do principals. The third important difference concerns the use of process S2 which is seen by teachers to be used more frequently than principals perceive it to be used.

These data provide some evidence supportive of the hypothesis and some contra-indications. If process S1 and S2 are grouped and classified as low participation processes there is support for the proposition

Table 6.2

Principals' and Teachers' Perceptions of Decision Process Used - Case Data

Source	S1	S2	S3	S4	S5	S6	S7
Principals							
Frequency of Use	36	2	31	27	6	30	20
Percentage Use	23.6	1.3	20.4	17.8	3.9	19.7	13.2
Cumulative Percentage	23.6	25.0	45.4	63.2	67.1	86.8	100.0
Teachers							
Frequency of Use	21	27	85	74	59	63	34
Percentage Use	5.8	7.4	23.4	20.4	16.2	17.4	9.4
Cumulative Percentage	5.8	13.2	36.6	57.0	73.2	90.6	100.0

that teachers perceive less use of autocratic processes than is perceived by principals (13.2 percent of teachers, 25 percent of principals). If processes S3 and S4 are grouped, though Vroom and Yetton see S4 as being much more participative than S3, there is a substantially greater percentage of teachers who see these processes as being used than among the principals; 43 percent of teachers, 38.2 percent of principals. There are difficulties regarding the placement of S5 on the continuum. If it is grouped with S6 and S7 as high participation processes, then there is support for the proposition that teachers perceive greater use of high participation processes.

The low ratings given by teachers to S1 provided strong support for the hypothesis that they perceived themselves to have more influence over the decision process than they were perceived to have by principals as does the higher S5 - S7 ratings given by teachers. However, there was a need to determine if these differences were significant. Since the data were not at the interval level, t tests could not be used. The data were therefore subjected to the Kolmogrov-Smirnov two-sample test approach. This non-parametric test gives a value comparable to a Chi-Square value of 13.811 with two degrees of freedom. The Chi-Square value for 0.01 is 9.21 and for 0.001, 13.82, thus the value is statistically significant, the null hypothesis is rejected and the research hypothesis that teachers perceive themselves to have greater influence than they are perceived to have by principals can be supported.

Decision Importance and Teachers' Perceptions of Decision Process Used

Heller's (1971) contention that managers tend to share decisions which are relatively unimportant while using methods which allow them to retain control over important decisions has already been considered and has been found to have no support when principals were the data source. It is possible, however, that principals might not admit that this was so or might not be aware of a tendency to do this. Consequently teacher data were used as a check on the earlier finding. Principals' ratings of decision importance were used for this purpose and a Chi Square test applied to the data in Table 6.3.

The results did not reach statistical significance which indicated

Table 6.3

Decision Importance and Choice of Decision
Process as Perceived by Teachers

Importance	Decision Process S1	S2	S3	S4	S5	S6	S7	Total
2	0	1	4	5	2	0	3	15
3	5	8	15	11	13	14	8	74
4	4	9	19	24	21	19	6	102
5	11	9	47	34	23	30	18	172
Total	20	27	85	74	59	63	35	363

Chi-Square = 18.06 Significance = 0.452

that choice of a decision process was not contingent upon decision importance. It is of interest to note the large number of decisions considered important reached through use of the S3 and S4 process, for example, the expected frequency for process S3 is 40.2 whereas 47 persons perceived an S3 to have been used. It may be that the particular time at which the data were collected contributed to this imbalance. Principals invariably considered that decisions concerned with timetabling were amongst the most important of all decisions they made. The collection of information and opinion on timetabling is one for which the S3 process is particularly appropriate and thus the result may not be typical. However, statistically, there was no significant relationship between decision importance and decision process used, and this finding confirmed the earlier finding using data supplied by principals.

VALIDITY OF THE VROOM-YETTON MODEL

The primary purpose of this study was to determine the utility of the Vroom-Yetton model in the school setting. Utility may be seen as having two components. The first concerns the validity of the model; only if the model is valid does the other component, which is concerned with operationalizing the model in the school setting, become a concern.

The procedures undertaken using principal data indicated that the model was not valid in the school setting. It may be argued, however, that the principals' perceptions of decision process used might have been affected by their perceptions of what they should have done rather than what they did while their judgement of the decision outcomes might have been clouded by their involvement in the decision making process.

In the section which follows, teacher perceptions of the decision process used and ratings of decision outcomes are tested against the feasible set of decision processes established by the principals' answers to the attribute questions. Four combinations of data were considered. These are shown in Figure 6.1.

The model could be considered valid if its use increased the frequency with which successful decisions were made and if the degree of success of decisions consistent with the model was higher than the success of those which were inconsistent. Since decisions were not made as a result of use of the model all that could be done, retrospectively, was identify those decisions which were consistent with the model and compare the results of these with the results of decisions which were not consistent.

Outcome Measure	Perception of Outcomes	Decision Process Used	
		Principals' Perception	Teachers' Perception
Success	Teacher	Hypothesis 22	Hypothesis 21
Ratings	Teacher	Hypothesis 23	Hypothesis 24

Figure 6.1 Teachers' Perceptions of Decision Process Used, Decision Outcomes and Their Relation with Principals' Perceptions in Testing the Validity of the Vroom-Yetton Model

Teachers' Perceptions of Decision Process Used, Consistency with the Feasible Set and Decision Success

By answering the attribute questions and tracing the answers on the decision tree, users of the Vroom-Yetton model are led to one of 13 problem types. Associated with each problem type is a feasible set of decision processes. Each of the elements in the feasible set is considered appropriate for use in the particular situation faced by the manager. In some cases such as problem types 2, 5, 6, 9, 11 and 12, the feasible set contains only one decision process. In others, as for example problem types 1 and 3, all decision processes are included.

Because this study was based on seven decision processes instead of five contained in the original model, there was a need to decide what course of action should be followed where teachers nominated processes which did not appear in the feasible set. The same line of reasoning as applied previously required that S6 should be accepted as being consistent if the model included GII in the feasible set. Again, process S5 provided a problem of classification. For principals the problem was resolved according to the manner in which the principal viewed the decision as either prescribing or suggesting the action he should take. Of the 33 principals, 18 viewed it as prescribing the course of action, nine viewed it as being in the nature of advice and six claimed not to use the process, although one teacher in three of the six schools and two teachers in one perceived an S5 to have been used. The questionnaire did not ask teachers for their views as to whether they saw a vote as being binding. However, in the light of the status accorded voting in this culture, it is believed that teachers would perceive a vote as being the choice phase of the decision process. For this reason, where teachers specified S5 as the process used it was treated as being consistent with the feasible set if the set contained a GII process.

Teachers' perceptions of the decision process used in each case were compared with the feasible set. If the feasible set included the decision process nominated by the teacher as having been used, the teachers' response was classified as being consistent. Each decision was classified on the basis of both consistency with the feasible set and whether or not the decision was considered successful by teachers. Hypothesis 21 was framed to allow testing of the proposition that consistency and decision success were related.

> Hypothesis 21. Where the decision process used, as perceived by the teacher, is consistent with the feasible set it is more likely to be considered successful by teachers than where it is not consistent.

The principals' answers to each of the attribute questions was again used to determine the feasible set. Each teacher's perception of the decision process used was compared with the feasible set and a four cell classification was produced.

Table 6.4

Decision Success and Consistency with the Feasible Set - Teachers' Perceptions of Decision Process Used

	Consistent	Inconsistent	Total
Successful	212	109	321
Unsuccessful	20	21	41
Total	232	130	362

Chi-Square = 4.9320 Significance = < 0.05 $\phi = 0.1167$

The results allow rejection, at the 0.05 level, of the implicit null hypothesis that consistency with the feasible set and decision success are not related and allows acceptance of the research hypothesis that there is a relationship, though this relationship is weak.

Though a relationship had been established it was possible that this was attributable to the tendency for decisions consistent with the feasible set to be more participative than decisions which were inconsistent and thus decision process rather than consistency with the feasible set to be responsible for the above result. In order to test the possibility that the observed relationship was a function of decision process, analysis of the data provided in Table 6.5 was undertaken.

Table 6.5

Decision Success and Agreement with the Feasible Set of Decision Process Used as Perceived by Teachers

Feasible Set Status & Decision Outcome	Decision Process						
	S1	S2	S3	S4	S5	S6	S7
Agreement							
Successful	7	13	53	50	31	34	24
Unsuccessful	3	3	6	4	0	4	0
Disagreement							
Successful	7	11	18	17	24	21	11
Unsuccessful	5	2	7	0	3	4	0
Chi Square	.32	.24	4.47*	1.33	1.855	.41	-
ϕ	.12	.09	.23	.04	.18	.08	

* Significance = < 0.05

Of the individual process Chi Square (χ^2) results, only those for process S3 are significant. The fact that this is a low participation process would suggest that the agreement is a result of consistency with the feasible set rather than a function of the decision process used.

In summary, Table 6.4 reveals a statistically significant relationship between decision success and consistency between the feasible set prescribed by the model and the decision process used as this is perceived by teachers. Though significant the relationship is not strong.

However, it does not appear to be based on the level of participation and this provides some support for the validity of the model. The results presented in Table 6.5 indicate that the relationship is not due to the effect of participation. The hypothesis that there is a relationship between consistency with the feasible set and decision process may therefore be accepted.

> Hypothesis 22. Where the decision process used, as perceived by the principal, is consistent with the recommendations of the model it is more likely to be considered successful by teachers than where it is not consistent.

Using principal data to establish whether the process was consistent with the feasible set and teacher perceptions of success, an analysis was performed to test hypothesis 22. The results are shown in Table 6.6.

Table 6.6

Principals' Perception of Decision Process Used, Consistency with the Feasible Set and Teachers' Perceptions of Decision Success

	Consistent	Inconsistent	Total
Successful	223	102	325
Unsuccessful	22	20	42
Total	245	122	367

Chi-Square = 4.4202 Significance = < 0.05 $\phi = .1097$

There is, thus, a relationship significant at the 0.05 level between consistency with the feasible set and decision success. However, the relationship is not strong ($\phi = 0.1097$).

It is possible that the observed relationship might be explained because participative decisions are more likely to be within the feasible set than autocratic ones, and it was therefore necessary to test for this possibility. Data for this check are provided in Table 6.7.

Table 6.7

Relationship Between Feasible Set and Teachers' Perception of Decision Outcome for Each Decision Making Process

Feasible Set Status & Decision Outcome	Decision Process							
	S1	S2	S3	S4	S5	S6	S7	Total
Agreement								
Successful	31	3	55	39	11	38	46	223
Unsuccessful	6	0	5	8	1	2	0	22
Disagreement								
Successful	35	3	14	13	3	28	6	102
Unsuccessful	5	0	6	3	0	6	0	20
Total	77	6	80	63	15	74	52	367
Chi-Square	.214		4.87*	.625		3.51		4.42*
ϕ	.052		.25	.099		.22		.11

* Significance = < 0.05

The zero cell frequencies associated with processes S2, S5 and S7 make the calculation of Chi-Square meaningless. It is of interest to note that the only process for which a significant relationship was established is the low participation process S3.

In summary, Table 6.6 indicates that the implicit null hypothesis of no relationship between decision consistency as perceived by principals and success as perceived by teachers can be rejected. The results of Table 6.7 indicate that the relationship is not a function of increased participation, and thus the research hypothesis can be accepted. The relationship established, however, is weak.

Consistency with the Feasible Set and Decision Outcomes

In addition to simply stating whether they considered decisions to be successful, teachers were asked to rate the decisions on seven-point scales. If the model was valid it would be expected that decisions which were in accord with the prescriptions of the model, that is which were consistent with the feasible set, would receive higher ratings of decision outcomes than those which were not consistent.

> Hypothesis 23. Where the decision process used, as perceived by the principal, is consistent with the feasible set, the mean overall effectiveness as measured by teachers' ratings will be higher than where the process is inconsistent with the feasible set.

While the focus in this hypothesis is on overall effectiveness, analyses was also applied to decision quality and acceptance. This was done so that any significant result in overall effectiveness could be associated with one, the other, or both of the other factors.

The hypothesis was tested by comparing the means of decisions consistent with the feasible set with those not consistent. The results of this analysis were provided in Table 6.8.

Table 6.8

Consistency, Principals' Perceptions of Decision Process Used, and Teachers' Ratings of Decision Outcomes

		Mean Ratings		
Status	Number	Quality	Acceptance	Effectiveness
Consistent	241	5.49	5.50	5.52
Inconsistent	119	5.48	5.39	5.27

While the differences in means were all in the predicted direction, all were small and did not approach statistical significance. The null hypothesis of no difference between the means of decisions consistent with the feasible set and those inconsistent could not be rejected.

Since there was no significant relationship, no analysis was necessary to determine the effect of decision process. Nevertheless, the data were classified according to the decision process used. The results are provided in Table 6.9.

Several of the results in Table 6.9 merit attention. The first is the large apparent differences in means for process S2; however, there were only six scores involved for each criterion and thus the differences in means are not significant. The second point is that while all differences in S1, S2 and S3 are small, all are in the predicted direction.

Table 6.9

Consistency, Teachers' Ratings and Decision Process Used

Status/Outcome	Decision Process						
	S1	S2	S3	S4	S5	S6	S7
Quality							
Consistent	5.47	6.33	5.33	5.37	5.42	5.65	5.68
Inconsistent	5.40	5.33	5.26	5.50	5.67	5.50	6.50
Acceptance							
Consistent	5.53	6.33	5.52	5.22	5.58	5.47	5.57
Inconsistent	5.10	5.67	5.37	5.25	5.67	5.59	6.33
Effectiveness							
Consistent	5.64	6.33	5.48	5.20	5.75	5.40	5.80
Inconsistent	5.25	5.00	4.95	5.25	5.33	5.50	5.33

This consistency of relationship does not occur in the other processes. The third point of interest is in connection with process S7, where the means, for both quality and acceptance, of cases consistent with the feasible set are substantially lower than for cases inconsistent with the feasible set. The reason that an S7 is inconsistent with the feasible set is because this process was used when subordinates did not share the organizational goals. In discussing violation of decision rules in Chapter 4, it was pointed out that the goals rule protected decision quality at the expense of subordinate acceptance since observance of the rule precluded subordinates from maximum participation. It might, therefore, be expected that in decisions consistent with the feasible set, the quality mean would be high since decision quality was protected by application of the rule. This did not occur. On the other hand, by violating the rule, principals enabled teachers to participate in a process which was not otherwise open to them. This means that acceptance was given priority over quality and the teacher ratings do reflect this. The atypical result obtained provides further cause for subjecting this rule to the detailed analysis reported in Chapter 7.

Two way analysis of variance using an hierarchical approach and multiple regression analysis using a "step-down" approach were both applied to the data to determine whether decision process or consistency with the feasible set was contributing to any relationship. While in neither case did the results approach significance, decision process accounted for much more of the variance than consistency with the feasible set irrespective of the approach used. These results would suggest that because processes which are participative are more likely to be consistent with the feasible set than those which are not, any effect which consistency with the feasible set has is primarily because of this factor. Again it should be understood that the amount of variance accounted for by both processes and consistency together is only about 8 percent.

Teacher Ratings of Decision Outcomes and Consistency with the Feasible Set

The teacher ratings for each of the decision outcomes allowed a more analytical approach to be made to any relationship which might exist between decision outcomes and consistency with the feasible set. If the model was valid its observance should lead to more successful decisions being made which should be reflected in teachers' ratings. Again, the feasible set was determined from the model using the principals' responses to each of the attribute questions. Teachers' perceptions of the decision process used were compared with the feasible set to determine whether they were consistent.

> Hypothesis 24. Where teachers' perceptions of the decision process used are consistent with the feasible set the teachers' ratings of decision outcomes will be higher than where they are not consistent.

While the focus of whether or not the model is valid rests primarily on the overall effectiveness of the decisions, quality and acceptance were also investigated. A t test applied to the data of Table 6.10 was used to determine whether the differences were significant.

Table 6.10

Decision Outcomes and Consistency with the Feasible Set - Teachers' Perceptions

	Consistent		Inconsistent		F		t Test	
Outcome	N	Mean	N	Mean	Value	Significance	t	p
Quality	229	5.48	131	5.50	1.21	.22	-.15	ns
Acceptance	231	5.55	132	5.33	1.36	.04	1.42	ns
Effectiveness	230	5.53	131	5.28	1.31	.07	1.72	.044

Since the hypothesis is directional, one-tailed values of t are appropriate. Only for overall effectiveness are the means significantly different though the differences approach significance for acceptance.

In the case of decision quality the differences are not in the hypothesized direction but the difference is small and does not approach statistical significance.

The implicit null hypothesis cannot be accepted in its entirety. Significant differences between the means of cases consistent with the feasible set and those inconsistent were established for overall effectiveness. A modified hypothesis, that consistency with the feasible set and ratings of overall effectiveness were related, could therefore be accepted. The relationship, however, was weak.

The possibility existed that the significantly higher mean associated with cases that were consistent with the feasible set was a result of the tendency for these cases to be more participative than those which were not consistent and that it was thus process not agreement with the model that would explain the relationship. If this was the case, the same result might be achieved by simply increasing the degree of participation and not using the model.

To test for the possibility outlined above, analysis of variance using an hierarchical approach was applied to the teachers' ratings of overall effectiveness. This analysis indicated that both main effects and the effect of decision process were statistically significant while consistency with the feasible set approached, but did not achieve statistical significance. The multiple R^2 resulting however was small, 0.090. Use of multiple regression analysis using a step down approach also indicated that consistency with the feasible set contributed much less than decision process to the overall result. Thus, while there was a relationship between consistency with the Vroom-Yetton model and teachers' ratings of overall effectiveness, almost all of this could be attributed to the effect of decision process. Consistency with the feasible set contributed so little as to be insignificant.

In view of this finding, the validity of the Vroom-Yetton model in the school setting could not be confirmed as a result of the observed significant relationship between conformance with the model and ratings of overall effectiveness as supplied by teachers.

SUMMARY

Results of the analysis reported in this chapter have indicated that there is a wide gap between principals and teachers over the prior probability question with principals significantly under-estimating the desire of teachers to be consulted on specific decisions. This finding has raised the possibility that there could be discrepancies between principals and teachers in respect of judgement of other decision attributes.

There are wide discrepancies between principals and teachers on what decision process was used in each case. This discrepancy appears unrelated to whether or not principals believed that they had made explicit the role of teachers in the decision process. Principals appeared to perceive themselves using processes closer to the ends of the participative continuum than they were perceived to use by teachers. Teachers perceived themselves to have more influence on decision making than they were perceived to have by principals. Choice of decision process did not appear to be dependent upon the principals' perception of how important decisions were.

With respect to the validity of the Vroom-Yetton model, a number of statistically significant relationships were established. These are shown in Table 6.11.

Table 6.11

Teachers' Perceptions of Decision Outcomes and the Validity of the Vroom-Yetton Model

	Decision Process	
	Principals' Perceptions	Teachers' Perceptions
Teachers' Perceptions of Outcomes	Consistency Success < 0.05 $\phi = 0.1097$	Consistency Success < 0.05 $\phi = 0.167$
	Ratings No Significant Result	Effectiveness Relationship < 0.05

There was evidence of a relationship between decision success as perceived by teachers and consistency with the feasible set whether principals' or teachers' perceptions of decision success were taken into account. In the latter case there was some evidence that consistency with the feasible set rather than the more participative nature of decisions consistent with the model was responsible.

A significant but weak relationship between teachers' perceptions of decision process used and consistency with the feasible set was established in respect of teachers' ratings of overall effectiveness but the use of a hierarchical regression procedure indicated that almost all of this relationship could be explained by the more participative nature of decisions consistent with the model. As a result the capacity of the model to contribute to more successful decisions in the school setting could not be confirmed. However, attention will be devoted in Chapter 7 to possible modification to take account of particular factors which appear to influence the model in the school setting.

Chapter 7

TOWARDS A REVISED MODEL FOR SCHOOL DECISION MAKING

The results of the study indicated that the Vroom-Yetton model had limited value in the school setting. Previous investigations by Vroom and Yetton (1973), Yetton (1976) and Vroom and Jago (1978) had confirmed the validity of the model in other settings; consequently, supplementary analyses were carried out to determine the reasons for differences in results. The findings which emerged from the supplementary analyses are reported in this chapter. Additional analyses are reported and possible reasons for the differences are proposed. The chapter concludes with some suggestions regarding possible modifications to the model for use by school administrators.

In both of the previous major published validation studies, Vroom and Yetton (1973) and Vroom and Jago (1978), the investigators reported that in about two-thirds of the cases managers' decisions were consistent with the feasible set as prescribed by the model. When principal data were used a similar result occurred in the present study; 101 cases were consistent with the feasible set and 50 cases were inconsistent. This correspondence may be viewed as adding some confidence to the reliability of the data and some indication that the general operation of the model in the school setting is likely to be similar to that in other settings.

Few unsuccessful cases were reported by Vroom and Yetton (1973);

of the 136 cases only 39 were judged unsuccessful. The differences between consistency and success and inconsistency and lack of success were in the predicted direction but failed to achieve acceptable criteria for statistical significance. In a subsequent study Vroom and Jago overcame this problem by specifying the mix of successful and unsuccessful cases.

In the present study only 11 cases were considered by principals to be unsuccessful; consequently, the analysis of these cases was not expected to yield a great deal of information upon which possible changes in the model might be based. There were, however, 48 cases which were inconsistent with the model and yet were judged to be successful. Since the cases were inconsistent with the feasible set, a decision rule or decision rules must have been violated. Most of the analysis in the section which follows is based on these decision rule violations.

DECISION RULE VIOLATIONS

The version of the Vroom-Yetton model which was used has seven decision rules, each of which proscribed use of one or more processes in given situations. Since these rules will form much of the basis of the analysis which is to follow they are restated below.

1. The Information Rule: If the quality of the decision is important, and if the leader does not possess enough information or expertise to solve the problem by himself, AI is eliminated from the feasible set.

2. The Goal Congruence Rule: If the quality of the decision is important, and if the subordinates cannot be trusted to base their efforts to solve the problem on organizational goals, GII is eliminated from the feasible set.

3. The Unstructured Problem Rule: When the quality of the decision is important, the leader lacks the necessary infor-

mation or expertise to solve the problem by himself, and if the problem is unstructured. . . AI, AII and CI are eliminated from the feasible set.

4. The Acceptance Rule: If the acceptance of the decision by subordinates is critical to effective implementation and if it is not certain that an autocratic decision made by the leader would receive that acceptance, AI and AII are eliminated from the feasible set.

5. The Conflict Rule: If the acceptance of the decision is critical, an autocratic decision is not certain to be accepted, and subordinates are likely to be in conflict or disagreement over the appropriate solution AI, AII and CI are eliminated from the feasible set.

6. The Fairness Rule: If the quality of the decision is unimportant, and if the acceptance is critical and not certain to result from an autocratic decision, AI, AII, CI and CII are eliminated from the feasible set.

7. The Acceptance Priority Rule: If acceptance is critical, not assured by an autocratic decision, and if subordinates can be trusted, AI, AII, CI and CII are eliminated from the feasible set.

Decision Rule Violations and Decision Process S1

Table 4.18 indicated that of 36 decisions in which the principal used an S1 decision, 19 were consistent with the feasible set and 17 were inconsistent. In the study as a whole two-thirds of all decisions were consistent, thus there is considerable difference between decisions made using an S1 process and the cases as a whole. Of the 17 decisions which were inconsistent with the feasible set, 16 were judged to be successful. To establish the validity of the model, there is need for a high proportion of cases which are consistent with the feasible set to be judged successful and a high proportion of the inconsistent cases to be judged unsuccessful. Since this did not happen in relation to process S1, detailed analysis of this process was undertaken and the results appear in Table 7.1. The table shows the number of rule violations for each of

Table 7.1

Analysis of Successful Decisions Made Using an S1 Process

Which were Inconsistent with the Feasible Set

Case	Number of Violations	Rules Violated							Function	Teachers' Rating	
		1	2	3	4	5	6	7		Successful	Unsuccessful
1	2	x			x				Timetable	3	
2	2				x	x			Budget	3	
3	2				x	x			Timetable	1	1
4	2	x		x					Reporting		1
5	4	x		x	x	x			Supervision	2	1
6	2	x		x					Supervision	3	
7	1	x							Budget	2	1
8	1	x							Timetable	3	
9	1	x							Timetable	2	
10	2				x	x			Timetable	2	
11	2	x		x					Supervision	3	
12	3	x		x	x				Supervision	2	
13	2				x	x			Supervision	3	
14	2	x			x				Timetable	-	-
15	1	x							Timetable	-	-
16	2				x	x			Miscellaneous	2	1
	—	—	—	—	—	—	—	—		—	—
Totals	31	11	0	5	9	6	0	0		31	5

the 16 successful cases together with identification of the specific rules, the decisional area with which the case was associated and the number of teachers who rated the case as successful.

One possibility which existed was that principals, because the decision had been theirs alone, were inclined to rate the decision as successful while this perception might not have been shared by others. Analysis of the teacher data gave only limited support for this point of view. Eighty-six percent of teachers rated the inconsistent S1 decisions successful, which is close to the percentage of all decisions rated successful. A further factor was that only 36 responses were received from a possible 48. This percentage was 10 percent lower than for the responses as a whole. The percentage was reduced to this level because, in two cases, no teacher response at all was received. This happened in only two further instances in the remaining 136 cases. Principal ratings yielded means of 6.3 for quality, 6.1 for acceptance and 6.5 for overall effectiveness. The means of teacher responses were substantially lower; quality 5.5, acceptance 5.1, and overall effectiveness 5.2. These results were of the order expected; consequently, there was little evidence to suggest that the decisions were incorrectly assessed.

A second issue which was considered related to the rules which were violated. In only 14 of 152 cases were two or more rules violated, and 12 of these were involved in regard to process S1. This was not surprising since six of the seven decision rules proscribe the use of process S1. Of the rules designed to protect quality, the leader information rule (Rule 1) had been breached 11 times and on five occasions the unstructured problem rule (Rule 3) had also been broken. Despite this, successful decisions were still attained.

The Leader Information Rule

This rule applies when the leader believes that the decision contains quality elements and believes that further information is required before making the decision. The model assumes that the leader cannot obtain the information for himself since, in this situation, it precludes authoritarian decision and requires that the information be sought from a subordinate. The inference must be that the subordinates do have the information. If the problem is structured and the leader knows what information is missing and where this information can be found, he can obtain the information in any way he chooses. If the problem is unstructured, then the unstructured problem rule (Rule 3) applies and the decision process to be used must (1973:218), ". . . provide for interaction among subordinates likely to possess relevant information." The assumption is clear, namely, that subordinates can add to the information available and thus increase the potential rationality of the decision.

Further examination of the cases was undertaken. They related to a variety of functional areas. In three of the decisions, one concerning likely 1979 - 1980 school year enrollments and two to the legal requirements of supervision, the information might have been available from a superordinate but was unlikely to be available from a subordinate. In the other cases the decision appeared to hinge on matters of opinion. As an example, a principal was attempting to decide a school policy in regard to lunch hour supervision. The decision was assessed by the principal to contain quality elements. The principal did not believe that sufficient information was available and, further, considered the situation to be unstructured. Discussion indicated that there was a difference of opinion within the school on whether or not the school had an obligation to provide lunch hour supervision, even though precedent and school board policy did not require this to be done. The principal made the decision to provide supervision, without consultation, and volunteered to do all of the supervision required. Principal and teachers were all satisfied with the outcome and rated the decision highly; however, the decision was inconsistent with the model.

There were four comparable decisions. If all eight of these decisions had been considered as being consistent with the feasible set, the validity of the model would have been somewhat improved, particularly since S1 decisions do not gain any of their acceptance from the effects of involving subordinates in the decision process. For such decisions to be consistent with the feasible set some change in the model or its interpretation would be required in the school setting. One way to achieve this would be to amend the "Instructions for Coding Problems" (Vroom and Yetton, 1973:213) so that where a more rational solution could not be generated by the exchange of information within the school the quality requirement should be answered as "no." Many school related issues such as grouping practices, selection of instructional materials, considerations involving the relative merits of small class sizes compared with more preparation time for staff and many similar decisions would be affected. By coding those issues on which there is often a good deal of contradictory evidence and where the final decision usually is determined on the basis of personal preference as not containing quality elements, attention would be focussed on the acceptance requirement which is important in such cases. Alternatively, the information question might be amended. Instead of asking, "Do I have sufficient information to make a high quality decision?" the question might be rephrased to ask, "Is there likely to be additional information available in the school which would permit me to make a more rational decision?" A positive answer would proscribe the use of an AI decision. This amendment would also cover the situation already described in which there was additional information of relevance outside the school. An implication of use of this question is that the decision tree would have to be restructured.

The Acceptance Rule

The second aspect regarding process S1 which appeared to have implications for the validity of the model in the school setting concerned those cases in which the decisions become inconsistent with the feasible set because the acceptance rule was violated. Of the 21 teacher respondents, reporting on cases containing such violations, 18 considered these decisions to have been successful. The mean ratings of decision outcomes were as follows: decision quality 5.43, acceptance 5.14 and overall effectiveness 5.10. Considering the fact that this is the least participative process, these ratings indicate that teachers perceived these decisions to be reasonably successful despite their being inconsistent.

The acceptance rule applies when a quality decision is involved and acceptance of the decision by subordinates is according to Vroom and Yetton (1973:219), ". . . critical to effective implementation and if it is not certain that an autocratic decision will be accepted." One of the findings reported earlier was that principals tended to over-rate the degree to which teachers were prepared to leave decisions to principals without expecting consultation. This pattern applied also in this instance; 14 out of 20 teachers indicated that they would not willingly have the principal make the decision without consultation. This information suggested that the inconsistency did not arise because of an inaccurate perception by the principal that teachers expected involvement.

Two other possibilities existed. The first was that the model was inappropriate; the second that the principal had miscoded the acceptance requirement by indicating that acceptance was necessary when, in fact, it was not. Reference to the "Instructions for Coding Problems" provided by Vroom and Yetton (1973:216) indicated that:

> If none of your subordinates is executing the decision or solution, your response to this question should be NO. If they are involved in its execution but the nature of their involvement is such that compliance rather than acceptance is sufficient for its implementation, your answer should be NO.

Analysis of the cases indicated that three cases involved timetable decisions. In each case a teacher was required to undertake a task which no one wished to accept. In one case a new teacher was employed to do the job, in the other two cases a teacher was nominated to do the job by the principal but some concessions were promised. Three cases involved supervision. In one of these the principal undertook all supervision, and thus staff were not involved. In the other two cases no change was made to the previously existing pattern. It may be argued that because no additional demands were made on teachers their compliance was sufficient. One of the remaining cases, involved a reduction in budget allocations, which was achieved by reducing all individual budgets by the same percentage. Since there was no alternative for teachers but to accept this decision, it could be viewed as a situation in which compliance was sufficient. In the final case, declining enrollments made it economically desirable to concentrate all teaching in one area of the school and to close the smaller part. The principal raised the matter with the staff but believed that there was such division of opinion that agreement was impossible. He then made a rationally defensible, autocratic decision to close the smaller building. Two teachers judged this decision to be successful, while one judged it to be unsuccessful and gave low ratings on all three criteria.

As pointed out in Chapter 4, in 133 of 152 cases subordinate acceptance of the decision was considered by principals important for effective implementation. In the view of the investigator, however, in the majority of the cases reported above compliance would have been sufficient.

The Unstructured Problem Rule

If the acceptance question is answered "yes," then the question of whether subordinates would willingly accept the superordinate making the decision autocratically is invoked. The very high proportion of negative answers to this attribute has already been reported; thus, there is a strong likelihood that if the acceptance question is given a "yes" response, then the prior probability of an autocratic decision being willingly accepted will be answered negatively. If this happens and subordinates share the organizational goals one of the group processes is recommended. If subordinates do not share the goals a CI or CII decision is prescribed by the model. Both of these are participative processes. As has been demonstrated, 16 cases which were judged successful were inconsistent with the model.

Dealing with these cases in isolation from all others, two modifications to the model emerged. The first, required that the information question be coded "yes" only if the collection of additional information was likely to lead to a more rational solution. The second suggested that the acceptance question might be reworded in the form, "Is compliance with the decision sufficient to make its successful implementation likely?" This latter rewording also had implications for the drawing of the decision tree. These suggestions will be examined further in a later section.

Unsuccessful Decisions Using the S1 Process

While only five unsuccessful cases were reported which involved the use of the S1 process, four of these were consistent with the feasible set. Three possible reasons may be advanced for this high proportion. The first was raised by Vroom and Yetton (1978) when they pointed out that choice of the correct decision process does not ensure the success of a decision. The second possible reason is that the decision attributes in these cases were inappropriately judged, and the third is that the model is not applicable to all cases in the school setting.

The four decisions were analyzed. The mean principal rating of overall effectiveness was 3.0. One of the questions related to the filling of a temporary promotional position. The principal believed it advisable not to ask for staff opinion on this matter. Seven responses were received concerning the other three cases. Four teachers believed the decisions to have been successful, three considered them to have been unsuccessful. The mean for overall effectiveness was 5.3, and no clear pattern of response was evident. In one case the principal had been refused permission by the Board to do what he wanted to do and felt that, though the best alternative had been selected, it was far less suitable than the original scheme. The three teacher respondents, however, rated the decision as successful. A second case related to a budget matter where, in the principal's view, the demands from one subject area made any resolution of the matter by discussion most unlikely. The third decision related to grouping of students for optional subjects. After considering the matter, the principal had decided to maintain the previous practice, and, at the time of the second interview, regretted the decision.

In only one case of the 152 reviewed did a principal consider an inconsistent decision to be unsuccessful. This case involved the use of an S1 process. In this particular case a decision was made by the principal to introduce heterogeneous grouping for a one-year trial period. The rule violated was the leader information rule, the principal believed that he did not have sufficient information to make the decision but did not involve subordinates in the collection of additional information. This case appeared to be similar to several inconsistent successful decisions in that, while there was a great deal of information available concerning the relative advantages and disadvantages of various grouping practices, the information was equivocal, and it was unlikely that a more rational decision would have been made if staff had been consulted. It is relevant to note that all three teachers considered the decision to have been successful; the mean rating for overall effectiveness was 5.3. Each teacher had perceived a different process to be used, one perceiving an S4, one an S6 and one an S7. This case perhaps illustrates what happens when the decision process being used is not made explicit. From the teachers' responses it is clear that the matter was discussed. It appears that the principal had made up his mind and was providing formal notice of an autocratic decision. This is a specific decision process in the typologies of Tannenbaum and Schmidt (1958), Likert (1961), Heller (1971) and Bass (1975). Staff members, however, perceived this to be an opportunity to contribute to the decision.

Two other observations might be made concerning the 11 decisions considered unsuccessful by principals. The first was that four of the cases were provided by the same principal who was very experienced, had been in his school for a long period and appeared to be highly competent. It is possible that such a person might impose high standards for deciding that a decision was successful, and his teachers' responses would tend to support this possibility, since most of the teachers who responded from this school considered the decisions to have been successful.

The second observation arises from the last case described. The principal stated that he did not believe that staff acceptance was necessary for successful implementation and that staff compliance was sufficient. Because of this decision the question of whether staff would willingly accept an autocratic decision was not asked. However, two of the three staff who responded indicated that they would not willingly accept such a decision. While in this particular case the action appeared to cause no resentment, there is a likelihood that if principals continued to make decisions which precluded staff from what they perceived to be appropriate involvement this could lead to a measure of teacher dissatisfaction.

Consistency and the Group Processes

Because principals perceived that few decisions were made using the S5 (voting) process, the cases involving S5 decisions were separated, on the basis explained in an earlier section, and reclassified as being either consultative (S4) or group (S6) processes.

Processes S6 and S7 are both based on the same consistency rules and can therefore be considered together. When this is done there is a total of 51 cases, 16 of which were considered successful but were inconsistent with the feasible set. Information concerning these cases is shown in Table 7.2.

Table 7.2

Inconsistent, Successful Decisions Made Using Group Decision Processes

Case	Process Used	Principal Rating	Teacher Responses			Function
			Successful	Unsuccessful	Mean	
1	6	5	2	1	5.0	Timetable
2	6	7	2	1	5.0	Timetable
3	7	7	3	0	6.3	Budget
4	5	6	3	0	5.3	Timetable
5	6	6	3	0	5.0	Timetable
6	6	7	2	1	5.0	Reporting
7	6	5	3	0	6.3	Instruction
8	6	7	2	0	6.5	Supervision
9	7	6	3	0	4.3	Instruction
10	6	5	3	0	5.7	Timetable
11	6	7	2	1	5.0	Instruction
12	6	5	1	1	5.5	Timetable
13	6	5	2	1	3.5	Instruction
14	6	6	0	1	5.0	Instruction
15	6	7	2	1	6.3	Reporting
16	6	6	3	0	6.3	Timetable
Total		6	36	8	5.3	

Unlike the successful, inconsistent S1 cases where there were many multiple rule violations, all 16 cases became inconsistent because the goal congruence rule was violated. This rule, which applies whenever a quality decision is involved, proscribes the use of the group process when (Vroom and Yetton, 1973:218), ". . . subordinates are not likely to pursue organizational goals in their efforts to solve this problem. . . ." Table 4.22 indicated that if principals' perceptions of the quality of these decisions were used the means of decisions inconsistent with the feasible set were higher than those of decisions which were consistent (6.56 compared with 5.75). This difference was significant at the 0.005 level. The null hypothesis of no difference could therefore be rejected. Furthermore, with respect to subordinate acceptance the mean of decisions in which the rule was violated was lower than those in which the rule was observed. The null hypothesis of no difference could be rejected at the 0.004 level of confidence. Surprisingly, the results for overall effectiveness did not follow the same pattern. The mean for decisions in which the rule was not violated was 5.996 and for those in which it was violated 6.062. Use of a "t" test revealed that this difference did not achieve statistical significance.

The possibility existed that principals' perceptions both of the decision process used and ratings of outcomes might be very different from those of subordinates. Subordinate responses are shown in Table 7.3.

The teacher data tends to reinforce the principal data since, by a majority of 36 to 8, teachers considered the decisions to have been successful. There is also a good deal of correspondence between the

Table 7.3

Comparison of Principal and Teacher Perceptions of Process Used in Decision in Which the Goals Rule was Violated

Case	Process Used as Perceived by Principals	Process Used as Perceived by Teachers		
1	6	4	2	6*
2	6	4	5*	6*
3	7	5*	7*	5*
4	5	5*	5*	5*
5	6	3	5*	3
6	6	6*	3	6*
7	6	7*	7*	7*
8	6	5*	5*	7*
9	7	7*	5*	3
10	6	3	3	2
11	6	3	4	0
12	6	5*	5*	0
13	6	2	1	3
14	6	5*	0	0
15	6	6*	2	6*
16	6	3	6*	6*

Totals - Agree 27 . Disagree 17

* Indicates agreement with principal perception of process used

perceptions of decision process used; 27 teachers agreed that a group process had been used. In view of this, it seemed likely that the principals had correctly judged the situations, and a number of successful decisions were made which were inconsistent with the feasible set.

Vroom and Jago (1978:159) reported significant differences in the predicted direction between means for five of the seven decision rules. No significant difference, however, was established for the goal congruence rule although the differences were in the predicted direction. They did establish significant differences in the predicted direction for decision quality; the differences were in the opposite direction, although not significant, for subordinate acceptance.

The possibility exists that the goal congruence rule is not appropriate in the school setting. Some factors may be operating in schools which make the rule either difficult to apply or not appropriate. It has been pointed out that goals in schools may be less clear-cut than in many types of business situations. When the principal is asked to determine if staff share the organizational goals, there must sometimes be selection amongst multiple goals which the school seeks to achieve. An example may serve to illustrate this point. A principal wished to appoint a person to undertake a counselling role and sought the services of one from among a number of experienced, competent teachers to fill the position. A request was made, during a staff meeting, for any person interested in the position to see the principal. No one accepted this invitation. In discussing the question of what he should do next with the interviewer, the principal equated organizational goals with his own wishes, determined that subordinates did not share the organizational goals and thus answered "no" to the question of whether staff shared organizational goals. An alternative interpretation was that teachers did share some organizational goals, one of which was to retain good teachers in classroom contact with children. As Streufert (1978:218) pointed out: "In a decision making situation there is no correct solution. Rather the task force must explore the potential alternatives and select a course of action according to their own frame of reference." The exploring of potential alternatives can be done through the use of group processes, and it may be that, since many school situations call for action of the type described, a decision rule which precludes use of a group process has no place in the school situation.

A second possibility which might have implications for the goal congruence rule in the school situation is that the model treats each relevant subordinate as being equal and treats each case as a separate entity. As pointed out earlier, schools tend to have a flat hierarchical structure, and many decisions are relevant to the staff as a whole. When consultative or group procedures are used with reasonably large groups, such as the whole of an elementary school staff, not all participants have equal influence on group opinion. A principal might surrender control over the decision to a group if he believed that the opinion leaders shared the organizational goals. He might also do this if he was indifferent or unsure about the outcome of a decision. If he used a voting procedure he might surrender control over decisions in the cases where he believed the majority of the staff shared the organizational goals. Schools, too, are continuing organizations and each decision is not made in isolation. Teachers who did not share the organizational goals might go along with some decisions, even if this had adverse effects for them personally in the short term, as a type of repayment for past concessions or to avoid peer group resentment at the teacher's failure to cooperate with other staff members.

A third possibility related to the codes of conduct to which teachers may conform. In many cases principals gave examples of situations in which teachers failed to share the organizational goals but were prepared to put their own personal preferences aside for what they perceived to be the benefit of the students. As an example of such an action a principal described a case in which seven teachers were involved, one of whom had to teach a split-grade class. Such assignments are not preferred, and since a request for a volunteer had already been made without result it was clear that while subordinates might share the organizational goal of filling difficult teaching assignments with competent teachers, they did not share it to the extent that they were prepared to volunteer for a non-preferred position. The principal thus coded the goals question "no." Because he was not following the model, however, he was free to use a group procedure and asked the seven involved teachers to decide who should undertake this role. The decision was made quickly, and a highly suitable person was nominated. This teacher explained that she accepted the position because others had convinced her that she was the person best equipped to undertake the task in the present set of circumstances, and her professional code required her to do whatever was in the best interests of the children.

Consistency with the Feasible Set and the Consultative Processes

Both Vroom and Yetton (1973) and Vroom and Jago (1978) reported that, in about two-thirds of the cases involved in their studies the manager's behaviour was consistent with the feasible set. Results of the same general order occurred in this study for the consultative processes S3 and S4 with 44 cases being consistent with the feasible set and 16 not consistent.

Processes S3 and S4 derive most of their use from those situations in which the leader judges that subordinates do not share the organizational goals and thus the decision rules do not permit use of the group processes S5 to S7. Decision processes S3 or S4 appear in ten of the 13 problem sets. The only feasible sets in which one and/or the other does not appear are in problem types 2, 5 and 11 where GII is the only decision process in the feasible set.

Analysis of the rule violations showed that in five of the eight cases in which an S3 decision was used, the unstructured problem rule was violated. This rule requires that where the leader lacks information and the problem is unstructured (which means that the leader does not know where the missing information can be found), a decision process which allows for interaction among the subordinates should be used. Decision process S3 requires collection of information and opinion individually and, thus, does not meet the requirement. Six decisions, however, were made using an inconsistent S3 process and were considered successful. Three of these cases involved the filling of promotional positions. In each case the principal discussed the matter with the concerned persons individually and then made the decision. Discussion revealed that these three principals, all of whom were very experienced, always used an S3 process for such decisions. This raised the possibility that principals, as a result of their experience, used different styles for different types of problems.

Two of the cases were inconsistent because of the violation of the acceptance priority rule. This rule is based upon the assumption that (Vroom and Yetton, 1973:220), ". . . methods which provide equal partnership in the decision making process can provide greater acceptance." If there is no reason to inhibit involvement this rule requires use of the most participative process possible. The final inconsistency had breached the conflict rule. This rule requires that where disagreement among subordinates is likely, the decision process used should enable those who are in disagreement, to resolve their differences with full knowledge of the problem. This rule requires potentially conflictful situations to be confronted. While an alternative case may also be made, the comparatively few cases in which this rule was violated (eight times), and the fact that on only one occasion was this rule the only one violated, made it appear that this rule was unlikely to account for the discrepancy between previous validity studies and the present study.

In every case in which use of decision process S4 was inconsistent it was because the acceptance priority rule (Rule 7) was broken. The basis for this rule was given above. No further investigation of these breaches was carried out since, if the goal congruence rule (Rule 3) is modified as was suggested earlier, the acceptance priority rule also lapses because it differentiates between process S4 and the group processes.

THE EFFECT OF CHANGES IN THE MODEL

Three suggestions for changes in the model which would have the effect of making successful decisions consistent with the feasible set have been proposed. The first, used as the test of whether further information should be sought, was "Is there likely to be additional information available in the school which would permit me to make a more rational decision?" Some reasons why such a question may be more appropriate for use in the school setting have been advanced. The second proposed change does not involve a change in meaning but rather of emphasis by substituting the wording, "Is compliance sufficient for successful implementation of the decision?" for the previous acceptance question. It was suggested that this question would cause a more critical view of the need for acceptance. Thirdly, the applicability of the goal congruence rule in the school setting has been questioned, and some reasons have been advanced which would justify its removal. While each of these changes is likely to make a greater proportion of successful decisions consistent with the feasible set, it is also possible that some other implications will arise from such changes. While the removal of the goal congruence rule from the operation of the model is a routine task, those questions concerning information and acceptance pose difficult problems since they are situationally based. Because an interview method was used, the researcher was able to develop an understanding of each case and was able to recode the reworded attribute questions according to his perception of the situation. In a later section the effects of these changes on the validity of the model will be examined.

Other Possible Areas of Discrepancy

One possibility for the discrepancy in results between the present study and previous validation studies was that in the present case the principals were unfamiliar with the model. Consequently the possibility of inappropriate assessment by principals of the situational attributes is a real one. Part of this problem may be solved by the proposal made above, namely, that the investigator who was familiar with the model could recode two of the attributes. While the removal of the goal congruence question reduces the number of rules which must be considered, up to five other questions may still remain to be answered. Since such questions as, "Is conflict among subordinates likely in preferred solutions?" could not be answered without intimate knowledge of the situations in which the question applies, reassessment of these attributes was not possible.

One question about which relevant information was available related to subordinate willingness to accept an autocratic decision. Since teachers had responded to this question their replies were used as the basis for recoding.

RESULTS OF EXPERIMENTATION WITH THE MODEL

Several "recodings" of the information on different bases were undertaken, and the results are reported below. Some combinations of the changes were introduced and applied to both principal and teacher data.

The Original Model

Results obtained using both principal and teacher data and reported in Chapters 4 and 6 are collected and presented to provide a basis of comparison with the various modifications to the model which were made and tested. These data are reported in Tables 7.4 and 7.5. In relation to both decision success and the seven-point ratings, principal data did not reach statistical significance. In both cases teacher data reached significance but the relationships were not strong.

Modifying Quality, Acceptance and Prior Probability Responses

The initial modification addressed three issues. The first of these involved the attribute pertaining to quality. A quality decision

Table 7.4

Consistency with the Feasible Set and Decision Success Using Original Data

Feasible Set Status	Principal Data		Teacher Data	
	Successful	Unsuccessful	Successful	Unsuccessful
Consistent	91	10	212	109
Inconsistent	49	1	20	21
	Chi-Square = 2.623 Not Significant		Chi-Square = 4.93 Significance = < 0.05	

Table 7.5

Consistency with the Feasible Set and Ratings of Overall Effectiveness Using Original Data

Feasible Set Status	Principal Data				Teacher Data			
			T Test Result				T Test Result	
	N	Mean	Value	Significance	N	Mean	Value	Significance
Consistent	101	6.04	0.71	N.S.	232	5.53	1.72	0.044
Inconsistent	50	5.92			131	5.25		

is defined as one which has technical and rational elements. The cases were reviewed and those in which the investigator considered that, while there was a great deal of information available, much of it was conflicting and the decision eventually became a matter of opinion were coded as not having a quality requirement. The effect on cases where this procedure involved a change in the quality assessment was to focus attention on the acceptance and prior probability questions. Only two feasible sets S1 - S7 and S5 - S7 are available for cases not having a quality requirement. The acceptance attribute was considered, and if the investigator believed that compliance was sufficient for effective implementation of the decision the acceptance attribute was changed. The third change was to use teachers' perceptions of prior probability to recode this attribute. If two or more teachers disagreed with the principal's rating it was changed. The results are shown in Table 7.6.

Table 7.6

Decision Success and Consistency with the Feasible Set, Using Modified Perceptions of Quality, Acceptance and Prior Probability

Feasible Set Status	Principal Data		Teacher Data	
	Successful	Unsuccessful	Successful	Unsuccessful
Consistent	92	9	217	23
Inconsistent	48	2	108	19
	Chi-Square = 1.19 Not Significant		Chi-Square = 2.37 Not Significant	

Comparison of Tables 7.4 and 7.6 indicated no improvement in the agreement of cases consistent with the feasible set and success as a result of this modification.

Ratings of overall effectiveness were also used as the dependent variable. The results are shown in Table 7.7.

Table 7.7

Consistency with the Feasible Set, Ratings of Overall Effectiveness and Modified Perceptions of Quality, Acceptance and Prior Probability

Feasible Set Status	Principal Data				Teacher Data			
	N	Mean	T Test Result		N	Mean	T Test Result	
			Value	Significance			Value	Significance
Consistent	101	5.97	0.54	N.S.	239	5.544	1.97	0.051
Inconsistent	50	6.06			122	5.238		

As compared with Table 7.5, the effect of the changes on principal data was to change the direction of the relationship but the differences, in neither case, approached significance. The effect on teacher data, however, was to slightly reduce the probability that the differences were significant (0.044 compared with .051). Use of multiple regression analysis again showed that decision process was responsible for most of the accounted for variance. The model, modified in the way described, was therefore making little contribution to the explanation of the relationship between ratings of effectiveness and consistency with the feasible set.

Modifying Information, Acceptance and Prior Probability Attributes

In the second modification of the model the approach to the many cases in which there was conflicting evidence was to code these as having a quality requirement. This course of action seemed reasonable since such issues as whether or not corporal punishment should be used, whether integrated approaches to language arts are more effective than non-integrated approaches, and the relative merits of heterogeneous and homogeneous grouping practices all have some technical-rational elements but the information which can be generated within the school is unlikely to lead to a more rational decision. If decisions were of this type, the quality component was rated "yes," and the information question was also rated "yes," the reason being that, since further search for information was not likely to provide a more rational choice, there was no justification for an extended information search. Principals' codings of the acceptance attribute were reviewed and twelve changes were made. In only three cases was there a consequent change in the feasible set. (See Appendix M). Again, subordinate assessments of prior probability were used in cases in which two or more subordinates agreed with each other but disagreed with the principal. Results are shown in Table 7.8.

Results based on teacher data allow rejection of the null hypothesis that there is no difference between the success of cases consistent with the feasible set and those inconsistent and thus allows acceptance of the hypothesis that decision success and consistency with the feasible set

Table 7.8

Consistency with the Feasible Set, Decision Success and Modified Perceptions of Information, Acceptance and Prior Probability Attributes

Feasible Set Status	Principal Data		Teacher Data	
	Successful	Unsuccessful	Successful	Unsuccessful
Consistent	80	8	190	13
Inconsistent	60	3	135	29
	Chi-Square = 1.018 Significance = 0.313		Chi-Square = 10.30 Significance = 0.0013	

are related. Analysis to determine whether the significant relationship established in Table 7.8 was in the predicted direction was undertaken, using the ratings of overall effectiveness. The results are provided in Table 7.9.

The result for principal data does not approach significance. However, the teacher data result indicated that the means were significantly different. The null hypothesis was therefore rejected, and the alternative hypothesis that consistency with the feasible set is positively related to the mean success of decisions was accepted.

The possibility existed, however, that the established relationship resulted from the fact that decisions consistent with the feasible set are more likely to be participative than decisions inconsistent with the feasible set. Multiple regression analysis was performed to test

Table 7.9

Consistency with the Feasible Set, Ratings of Overall Effectiveness and Modified Perceptions of Information, Acceptance and Prior Probability Attributes

Feasible Set Status	Principal Data				Teacher Data			
			T Test Result				T Test Result	
	N	Mean	Value	Significance	N	Mean	Value	Significance
Consistent	88	6.02	0.32	N.S.	203	5.66	3.50	< .001
Inconsistent	63	5.97			158	5.16		

this relationship. When consistency with the feasible set was given priority the F value was 13.81 (probability < .001). When decision process was added, the F value was 17.86 (probability < .001). When decision process was introduced first the F value was 24.69 (p < .001). When consistency with the feasible set was introduced as a predictor of residual variance the R square value rose from 0.005 to 0.092 while the F value was 17.864 (p < .001). The individual contributions of both consistency with the feasible set and decision process were significant at the 0.001 level. Reference to the R^2 (square) change in both tables indicated that irrespective of order of treatment the variance attributable to decision process used was greater than for conformance with the model, but in both cases the effect of consistency with the model was statistically significant. The null hypothesis could therefore be rejected, and the alternative hypothesis that teacher ratings of delete overall effectiveness are associated with consistency with the feasible set accepted.

Decision Success and Consistency with the Feasible Set Using Modified Perceptions of Information, Quality, Prior Probability and Goals

While the above modification tended to support the validity of the revised Vroom-Yetton model in respect to teacher data, one major change suggested earlier was to remove the goal congruence rule from the model. This also has the effect of removing the need for the conflict rule and reduces the number of problem types. The effect is to increase the number of decisions consistent with the feasible set since S4 is added to the feasible set of problem types 2, 5, and 11 and S5 - S7 are added to the feasible set in problem types 4, 6a, 6b, 9 and 12. The data relating to this modification appears in Table 7.10.

Table 7.10

Consistency with the Feasible Set and Decision Success, Modified Perceptions of Attributes and the Suspension of the Goal Congruency Rule

Feasible Set Status	Principal Data		Teacher Data	
	Successful	Unsuccessful	Successful	Unsuccessful
Consistent	107	8	270	22
Inconsistent	33	3	55	20
	Chi-Square = 0.0 Significance = 1.00		Chi-Square = 19.70 Significance = < 0.0001	

statistically significant. The null hypothesis could therefore be rejected, and the alternative hypothesis that ratings of overall effectiveness are associated with consistency with the feasible set accepted.

Decision Success and Consistency with the Feasible Set Using Modified Perceptions of Information, Quality, Prior Probability and Goals

While the above modification tended to support the validity of the revised Vroom-Yetton model in respect to teacher data, one major change suggested earlier was to remove the goal congruence rule from the model. This also has the effect of removing the need for the conflict rule and reduces the number of problem types. The effect is to increase the number of decisions consistent with the feasible set since S4 is added to the feasible set of problem types 2, 5, and 11 and S5 - S7 are added to the feasible set in problem types 4, 6a, 6b, 9 and 12. The data relating to this modification appears in Table 7.10.

Table 7.10

Consistency with the Feasible Set and Decision Success, Modified Perceptions of Attributes and the Suspension of the Goal Congruency Rule

Feasible Set Status	Principal Data		Teacher Data	
	Successful	Unsuccessful	Successful	Unsuccessful
Consistent	107	8	270	22
Inconsistent	33	3	55	20
	Chi-Square = 0.0 Significance = 1.00		Chi-Square = 19.70 Significance = < 0.0001	

The results associated with the principal data indicated that if the principals' perceptions of process used and principals' perceptions of decision success were used as the independent variables, the removal of the goal congruency rule caused more cases to become consistent. The Chi-Square result indicated that there was no relationship between decision success and consistency with the model.

The results arising from the teacher data allow confident rejection of the null hypothesis of no relationship between consistency with the feasible set and decision success.

Analysis of the ratings of decision success allowed more detailed investigations of the relationships to be made. Data relating to these ratings appear in Table 7.11.

Table 7.11

Consistency with the Feasible Set, Ratings of Overall Effectiveness, Modified Perceptions of Attributes and Suspension of the Goal Congruency Rule

Feasible Set Status	Principal Data				Teacher Data			
			T Test Result				T Test Result	
	N	Mean	Value	Significance	N	Mean	Value	Significance
Consistent	115	6.03	0.55	N.S.	291	5.61	3.94	< 0.0001
Inconsistent	36	5.92			70	4.74		

While the difference in means of results using principal data are in the predicted direction, they do not reach statistical significance.

Analysis of the results arising from use of the teacher data indicates significantly different means. Equally strong results for decision quality and subordinate acceptance were also noted. The null hypothesis of no difference was rejected, and the research hypothesis that consistency with the feasible set is related to higher ratings of decision outcomes was accepted.

Since the principal data did not reach significance no further investigation regarding it was performed. The teacher data were subjected to regression analysis to determine whether the observed relationship was due to consistency with the feasible set or changes associated with the allowance of more participative processes.

Multiple regression analysis was used. When consistency with the feasible set was given priority in the hierarchical procedure the F value was 29.22 ($p = < .0001$). When decision process was introduced as a predictor of residual variance the F value was 18.18 ($p = < 0.0001$).

This indicates that both variables contribute to the final result. When decision process was given priority the F value was 24.70 ($p = < 0.0001$). The F value of consistency with the feasible set as a predictor of residual variance was 18.18 ($p = < 0.0001$).

There is a large degree of overlap between the factors indicated by their correlation coefficient of 0.520. When the contributions of each are separated, the F value for consistency with the feasible set is 10.96 and for decision process 6.67. Both are significant at the 0.01 level. The result, however, indicates that consistency with the feasible set is a highly significant factor in the observed relationship.

Summary

From the preceding analysis it appears that if modifications both to the attribute questions and to the rules underlying the Vroom-Yetton model are made, significant relationships between consistency with the model and decision outcomes result if the judgement is made on the basis of teachers' perceptions of decision process as well as decision outcomes. None of the proposed modifications have been effective in improving the relationship between consistency with the model and principals' perceptions of outcomes. Possible reasons for this discrepancy will be explored in Chapter 8.

ALTERNATIVE DECISION MODELS

Some principals had indicated that they used certain decision styles to handle problems of different types, such as the use of the S3 style for situations in which decisions regarding promotions were made. Since such practices had been developed over a period of some years, evidently with sufficient success for the principal to continue the practice, it seemed reasonable to test such methods against the data which had been collected.

The decisions were categorized by the investigator in several ways. In the first, functional categories had been established as detailed in Table 4.11. Using the model as a guide, feasible sets were established for each of the categories. Timetable decisions were first considered. It was believed that generally they were quality decisions and that information would be required before decisions could be made. In respect of acceptance considerations it was decided that the acceptance of subordinates was essential for effective implementation in such cases and that subordinates were unlikely to willingly accept an autocratic decision. Since timetables often required teachers to undertake non-preferred tasks, it was considered that the goals attribute should be answered in the negative. Tracing this path along the decision tree indicated that either problem sets 6a or 6b were appropriate and the feasible set was thus established as S3 and S4. Applying similar reasoning, the feasible set for each of the functions was established as follows: budgeting, S1 - S4; supervision, S2 - S4; reporting and grading procedures S5 - S7; miscellaneous, S4.

While these decisions were made in conformance with the model there are two important reservations. The first is that the use of a fixed process or variety of processes to make decisions without specific consideration of the special situational factors is antithetical to the rationale which lay behind the development of the model. The second point is that use of a limited number of categories meant that many quite dissimilar decisions were forced into a single category. This was very clear if budget decisions were considered. In the different school systems in which data were collected, schools were given widely varying amounts of power over the budgetary process. However, a decision covering the relative benefits to the school of the employment of an additional teaching aide compared to additional expenditure on teacher development activities were grouped in this classification with decisions on what per teacher allowance should be made for duplicating paper. Given such limitations, it was not surprising that the results did not support use of a procedure such as this as a device for deciding on an appropriate decision process. The results are shown in Table 7.12.

Table 7.12

Decision Success Associated with Use of Specified Decision Processes in Different Functional Areas

Feasible Set Status	Principal Data		Teacher Data	
	Successful	Unsuccessful	Successful	Unsuccessful
Consistent	70	4	152	20
Inconsistent	70	7	173	22
	Chi-Square = 0.32		Chi-Square = 0	
	Significance = 0.58		Significance = 1.00	

In view of the fairly restricted feasible set provided for each of the functional areas, the frequency with which decisions were consistent with the feasible set may be surprising since chance selection would suggest about only 40 percent of cases being consistent. This may point to the use of some restricted "rule of thumb" by many principals in making decisions; however, irrespective of whether this is so, the results give little support for the use of such a method.

The same feasible set was applied to ratings of decision outcomes. The results are shown in Table 7.13. No significant differences were observed.

A similar procedure was performed, using as the basis for classification, Mintzberg's (1971) decisional classification. The results were similar to those shown in Table 7.13.

Table 7.13

Decision Effectiveness Associated with Use of Specified Decision Processes in Different Functional Areas

Feasible Set Status	Principal Data				Teacher Data			
	N	Mean	T Test Result		N	Mean	T Test Result	
			Value	Significance			Value	Significance
Consistent	74	5.99	-0.16	N.S.	171	5.47	0.45	N.S.
Inconsistent	77	6.01			190	5.41		

SUMMARY

Analysis of categories of cases which were inconsistent with the Vroom-Yetton model but had been judged successful by principals and teachers was undertaken. Most of these cases appeared to be inconsistent because of the violation of one of two rules: the leader information rule or the goal congruence leader. A less important but contributory factor appeared to be that principals perceived teachers to be more willing to accept autocratic decisions than was indicated by teachers' responses. Detailed analysis of the cases revealed that a small proportion of cases may have been inappropriately coded in respect of the acceptance requirement.

As a result of the analysis, several modifications to the model were indicated and, as a result of testing the effects of these changes, a revised model (Figure 8.1) is proposed. Consistency with the feasible set and decisions outcomes are not related if principals' perceptions of decision process as well as ratings of outcomes are used. However, if teacher perceptions of decision process as well as ratings of outcomes are used, consistency with the feasible set is significantly related to the perceived effectiveness of decisions. Though the relationship between consistency and outcomes is not strong ($R^2 = 0.093$), it is significant at a high level of confidence. In view of this finding it appears that the revised model is valid in the school setting, if teachers' perceptions of process and outcomes are used.

Chapter 8

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The content of this chapter includes a summary of the results of the investigation, conclusions which may be drawn from the study and implications arising from these conclusions. Included in the latter are implications pertaining to decision making in schools, implications for further research and implications for the preparation of educational administrators.

SUMMARY

Purpose of the Study

The purpose of the study was to investigate the nature of administrative decision making in schools and particularly to determine if a model of decision making, the Vroom-Yetton model, which had been designed for use in other settings and whose concurrent validity had been established in those situations, was valid in the school setting. The study, thus, had two aspects: the first was concerned with general patterns of administrative decision making in schools, while the second focussed on the validity of the Vroom-Yetton model.

The section of the study concerned with decision making generally, dealt with such matters as the frequency with which school principals used decision making procedures involving participation by staff members, the extent to which teachers perceived themselves to be involved in decision making and their desires for involvement, and the perceived present degree of success of decisions made in schools. It was considered that these and other matters would be relevant concerns if the model proved valid because implementation might require changes to present patterns of decision making. If these changes were of a substantial nature implementation of the model might be impracticable, and some perception of present practice was therefore essential.

In the section of the study concerned with the validity of the Vroom-Yetton model, principals' perceptions of decision attributes were used to define the feasible set and consistent and inconsistent decisions were compared on four outcome criteria.

A review of literature, a large part of which was focussed on decision making in schools, was undertaken. As a result of this review, changes were made in the typology of decision styles proposed by the model. A number of research hypotheses (24) were also formulated.

Data Collection

The data collection was designed to take account of weaknesses identified in previous attempts to validate the Vroom-Yetton model. The procedures involved the collection of data before or at the time that decisions were being made rather than subsequent to the decision being made. The data collected first consisted of a description by the school principal of a decision which was to be made and the principal's perception of a number of situational attributes relevant to the Vroom-Yetton model. Each separate decision was termed a case, and 168 cases were collected from 33 respondents. A structured interview was used for this purpose.

Between five and six months later a second interview took place. At this interview the principal explained what decision was made and judged the outcome of the decision as being either successful or unsuccessful. In addition, ratings of decision outcomes on three criteria - decision quality, subordinate acceptance and overall effectiveness - were collected regarding the 152 cases on which judgements could be made. A questionnaire concerned with the principals' perceptions of decision making in the school generally was discussed and the interviewer recorded the principals' responses.

Data were also collected from teachers. All principals were willing to have staff members answer questions relating both to decision making generally and to the specific cases described by the principal. A brief written summary of each case was supplied to each teacher by the interviewer. A special form which included the questionnaire was used for this purpose. Each questionnaire was identified in order that it could be associated with the principal's perceptions of the same case. Of a possible 456 responses, 385 or almost 85 percent were returned.

Statistical Treatment

Though five and seven-point scales were used for the collection of much of the data it was assumed that, with one exception, these data did not meet the criteria to be considered as being at the interval or ratio level, and as a result non-parametric tests were used.

The one exception to this practice was in regard to the rating of decision outcomes. There were two justifications for this. The first was that teachers and principals have experience in rating outcomes of various types and their responses might, therefore, be expected to reflect, fairly accurately, their perception of reality. The second justification was Vroom and Jago had used this practice and, since the study was designed to be comparable with that of Vroom and Jago, there was a need to use a similar statistical basis.

In addition to use of non-parametric statistical procedures such as Chi Square tests, Kendall's Tau and the Kolmogorov-Smirnov two sample test, parametric procedures were also used. These included t tests, analysis of variance and hierarchical multiple regression procedures to determine the individual contributions of two independent variables when these were themselves closely related.

Results

The perceptions of principals regarding the generalized nature of decision making showed some similarities and some differences when compared with the perception of teachers. There was a general agreement that all seven decision processes used in the model were frequently used and were thus appropriate for inclusion in a taxonomy of decision processes appropriate for schools. Principals and teachers perceived principals to use a variety of decision processes and not to have a single prevailing style. Teachers perceived school decision making to be more participative than it was perceived to be by principals. There was evidence that elementary schools were perceived to be more participative than secondary schools and, as well, there was evidence to confirm that teachers perceive themselves to be differentially involved in decision making. These differences were related to sex, type of school and experience differences.

Principals and teachers displayed differences in their perceptions regarding the involvement of teachers in decision making. There was some agreement since two-thirds of the principals and one-half of the teachers perceived teachers to be satisfied with their present involvement. The difference, however, was that a majority of the principals who believed that staff were not satisfied, attributed their dissatisfaction to over-involvement while almost all teachers attributed any dissatisfaction to under-involvement.

Principals indicated that the involvement of teachers, while it improved decision quality, had its major influence by increasing teacher acceptance of decisions. There was a time-cost in involvement but most principals perceived this to be marginal. Analysis of the teacher data on this issue revealed that the desire for increased participation was significantly related to sex with male teachers exhibiting a greater discrepancy between present and desired levels of involvement than female teachers. A relationship between experience and discrepancy between present and desired levels of involvement was also statistically significant but not linear.

Analysis of the case data revealed support for the earlier finding that teachers perceived school decision making to be more participative than it was perceived to be by principals. One way in which this finding was demonstrated was through teachers' perception of the decision process used in making the decision. In most cases, teachers perceived a more participative process to have been used than that nominated by the principal. Since teachers perceived different decision processes to have been used in making the same decision, an analysis was conducted to determine whether the perceived degree of participation was related to perceptions of decision outcomes. Highly significant positive relationships were established for all three criteria.

Teachers who indicated that they would have used the same decision process as was used by the principal in making the decision gave the highest ratings of decision success. The small group who perceived a more participative process to have been used than was optimal gave significantly higher ratings than those who perceived a less than optimally participative style to be used.

Analysis of case data revealed that both teachers and principals perceived a high degree of success in the decisions made. Ratings of decision outcomes confirmed the high proportion of teachers and principals who considered the decision to have been satisfactory. Principals' ratings of outcomes were higher than those of teachers.

Both principal and teacher data indicated that principals did not vary their decision styles according to the perceived importance of the decision nor to the functional category with which the decision was concerned.

Analysis of the case data revealed that, for principals, subordinate acceptance was more closely related to ratings of overall effectiveness than were decision quality ratings. The opposite result was found by analysis of the teacher data.

Comparison of principal and teacher data indicated that principals greatly over-estimated the degree to which teachers were willing to accept autocratic decisions.

Cases were classified as consistent or inconsistent with the Vroom-Yetton model according to whether the principal's perception of the decision process used was consistent or inconsistent with the prescriptions of the model. There was no statistically significant relationship between consistency with the feasible set and any of the measures of decision outcomes as perceived by principals.

Use of teachers' perceptions of decision outcomes indicated that there were statistically significant but weak relationships between consistency with the feasible set and decision outcomes but these were largely attributable to the fact that decisions consistent with the feasible set tended to be more participative than decisions which were inconsistent. Increased participation rather than consistency was, thus, responsible for the relationship.

The cases which had been classified as being inconsistent on the basis of the principal's perceptions were subjected to individual analysis. Inconsistency arises from violation of one or more of seven rules. The inconsistent cases were analyzed and grouped according to the rule, or rules, violated. Analysis of the effect of the rules both collectively and individually was conducted. The goal congruence rule was found to have a statistically significant relationship with decision quality but in the reverse direction to that predicted, while the acceptance rule was found to have a statistically significant relationship with subordinate acceptance. However, the rules collectively or individually had no statistically significant relationship with the overall effectiveness of decisions.

Analysis of cases which were inconsistent with the feasible set but which were deemed to be successful led to some suggestions for modification of the model designed to adapt it to the particular circumstances of decision making in the school setting. The main changes were to modify the leader information rule to take account of the uncertainty surrounding many of the decisions made in schools and the abandonment of the goal congruence rule. When the data supplied by principals were applied to the modified model, no significant relationship between consistency with the feasible set and the success of decision outcomes resulted. Application of the data supplied by teachers to the modified model, however, resulted in statistically significant relationships between consistency with the feasible set and the decision outcomes being established.

CONCLUSIONS

In Chapter 1, nine questions were suggested as being relevant to the utility of the Vroom-Yetton model for selecting a decision process in the school setting. The answers to these questions constitute the major conclusions of this study.

It can be confidently asserted on the basis of both principal and teacher data that principals use a variety of decision processes.

The adequacy of the Vroom-Yetton taxonomy was not directly tested. The high perceived frequency of use of decision processes S5 and S6 in decision making generally and the use of both in the actual cases indicated that the processes do occupy an important place in school decision making. It may, thus, be inferred that the Vroom-Yetton taxonomy does not closely reflect school practice.

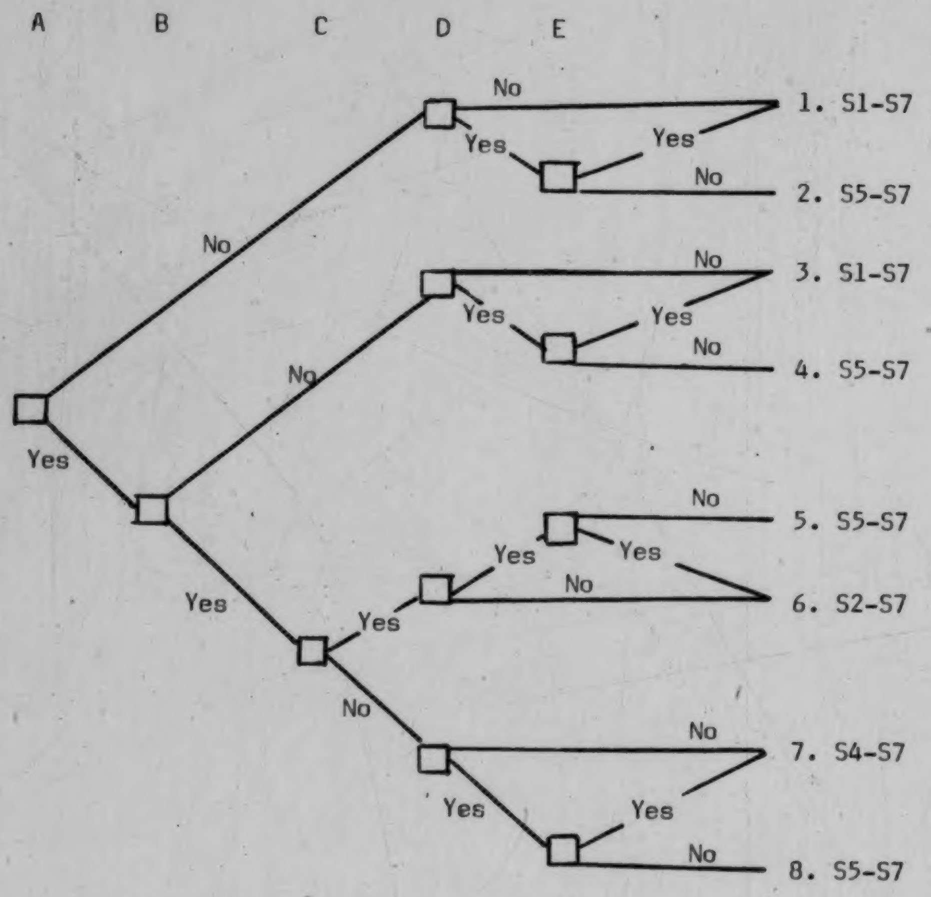
No situational influence other than those described by Vroom and Yetton appeared to exert influence on the choice of decision processes. It had been anticipated that the long period during which schools were not in operation due to holidays and the fluid participation particularly of teachers and students would be significant influences; no evidence to support this presumption was found.

No statistically significant relationship attributable to consistency with the Vroom-Yetton model and either decision success or ratings of decision outcomes as perceived by principals was established. If teachers' perceptions of the decision process as well as outcome measures were used, statistically significant but weak relationships were found. However, much of the relationship was attributable to the participative nature of decision processes which are consistent with the Vroom-Yetton model.

Analysis and subsequent modification of parts of the model indicated that the decisions which were consistent with the modified model (Figure 8.1) were associated with statistically significant differences in outcomes, if teachers' perceptions of decision process as well as decision outcomes were used. Evaluation of fewer problem attributes was involved in the modified model. Testing of simplified models based on use of a specified feasible set for different decisional areas, irrespective of situational factors, yielded no significant results.

The major changes made in the model were to clarify the information attribute question and to suggest that the goal congruence rule may not be applicable in the school setting.

While the perceptions of educational administrators in regard to decision success and ratings of decision outcomes were reasonably close to those of teachers, quite discrepant perceptions were noted in respect of perceptions of the decision process used. Principals' perceptions of decision quality and subordinate acceptance were directly related to the degree of participation of the decision process used, however, this finding was not repeated for overall effectiveness.


A
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1. S1-S7
2. S5-S7
3. S1-S7
4. S5-S7
5. S5-S7
6. S2-S7
7. S4-S7
8. S5-S7

A. Does the problem possess a quality requirement?

B. Is there likely to be additional information available in the school which would permit me to make a more rational decision?

C. Is the problem structured?

D. Is acceptance of the decision by teachers important for effective implementation?

E. If I were to make the decision by myself, am I reasonably certain that it would be accepted by staff members?

Figure 8.1 Vroom-Yetton Model Modified for Use in Schools.

While a majority of principals perceived teachers to be either optimally involved or over-involved, a far greater number of teachers perceived themselves as being under-involved than over-involved. Differences in the desire for involvement were significantly related to sex and experience factors.

A strong direct relationship was found to exist between teachers' perceptions of the decision process used in making a decision and ratings of decision outcomes.

Additional insights into school decision making were gained. Analysis of responses indicated that the frequency of use of different decision processes was related to school size, type of school and experience of the principal. Evidence to support a contention of differential involvement of teachers by principals according to the teacher's experience and period of service in the school was also gained.

These conclusions, while they are only valid for the schools in which the data were collected and only for the particular time of the school year during which the data were collected, have a number of implications. These are considered in the section which follows.

IMPLICATIONS OF THE STUDY

Some of the implications arising from the study have relevance for the operation of schools, some for future research and some for the preparation of educational administrators. Each of these is considered in the sections which follow.

Implications for the Operation of Schools

The strong association between the perceived success of decision outcomes and the degree of participativeness of the decision process perceived to have been used suggests that, if principals are in doubt as to the decision process which is appropriate in a given situation, they might use the most participative of the processes they are considering.

From the data supplied by principals, it seems likely that this course of action would have a time cost and might, thus, be difficult to implement. A further constraint is that many teachers believe they are optimally involved, and a relatively small group believe that they are over-involved. Any general increase in the use of participative decision processes in schools may, therefore, lead to a good deal of perceived over-involvement and, as the results have indicated, those who believe themselves to be over-involved tend to rate decision outcomes lower than those who are optimally involved.

There are several possible approaches to this apparent dilemma. The first is to devise decision strategies which permit those who desire increased involvement to participate more. The study indicated that increased teacher involvement has positive implications for decision quality as well as subordinate acceptance. Possibly the use of committee structures would allow differential involvement without an increase in the general level of involvement of all staff members.

A second possibility is to ensure that, when a participative procedure is being used, this be made explicit to staff members. In many of the cases, teachers perceived low participation procedures to be used when, in fact, the principal intended that a group process should operate and, indeed, perceived that it had operated. This more explicit approach might, perhaps, include principals explaining to teachers the reasons why the right to make some decisions without consultation was reserved by the principal.

Teachers in this study appeared to favour use of an S5 or voting procedure. Castore (1978) has pointed out some situations where such procedures appear to be successful and many school decisions appear to be of the types nominated. Selective use of voting procedures may provide an acceptable, effective and time efficient method for making some decisions.

A further possibility is for principals to concentrate the time available for staff participation on those issues which most need them. Hoy and Miskel (1978) have suggested some criteria for selection of appropriate staff to participate in each case. Perhaps the modified Vroom-Yetton model may provide a second alternative by indicating the issues which demand staff participation.

The results of the study show a surprising degree of satisfaction by both teachers and principals with the outcomes of the decisions included in this study. While these particular decisions may not be entirely representative of those made throughout the year, they were important decisions. To a large extent they dealt with issues which are most critical to teachers such as personal timetables, supervisory load, class size and other issues which virtually affect teachers' daily working conditions.

If such a high degree of success can be achieved using present decision rules for the selection of an appropriate decision process it may be relevant to question the need for any attempt to further improve these practices. The investigator's initial interest in this model arose from the promise which the model held to allow the selection, for executive action, of those cases which did not demand staff participation. A widespread trend is evident for central authorities in education to give schools greater control over their functioning in regard to such matters as budgeting, responsibility for school-based curriculum modification, grouping practices and many other matters. The increased responsibility makes school decision making even more important than before this trend became established. If teachers are already optimally involved in decision making, the increased decision load may bring problems unless those decisions which do not demand staff participation can be identified and dealt with by administrative staff. The Vroom-Yetton model held promise of being capable of doing this.

The modified model also appears to hold some promise. It should be stressed that this model has not led to the making of decisions of better quality but has modified a set of existing rules in such a way as to make these more appropriate in the school setting. There is a need to test the effectiveness of this model in use and to see whether its prescriptions do allow for more successful decision making than the present practices. Investigation has suggested that implementation of the model would not require great changes in what is presently happening in regard to decision making in schools. Perhaps the greatest difficulty which would arise concerns the gap in perceptions between principals and teachers regarding a variety of issues.

That there are wide gaps in perceptions between teachers and principals has been revealed in this study. The difference in perceptions of involvement has provided one example; the difference between teachers' and principals' responses to the question concerning the willingness of teachers to accept an autocratic decision provided another. It seems unlikely that if principals' perceptions of school related issues differ so widely from those of teachers as is indicated by these instances, that principals will be capable of making the judgements necessary to make the model's use practicable. However, irrespective of whether a model is used, doubt must exist as to whether principals whose view of some aspects of school operation are so different from those with whom they work can achieve optimal functioning in an organization, particularly in times when an increasing decision load is likely. Thus, the challenge exists for principals to design procedures which will allow them to gain accurate perceptions of staff opinion and take these into account in managing the organization. Some type of advisory body might provide one means of providing principals with access to teachers' perceptions of school operation.

Examination of the situations provided by principals has indicated that while many of the decisions are made under conditions of uncertainty, few appear to require high degrees of technical skill or sophisticated information gathering procedures. Essentially the problems shared were the problems of a manager rather than those of a professional consultant. This observation may suggest to principals, and perhaps also to employing authorities, the importance of the development of managerial skills such as determining what issues are appropriate for the use of consultative or group methods, how relevant parties to an issue can be identified and how meetings which are designed to achieve a variety of purposes may be most effectively managed. The importance of these issues is not dependent upon introduction of a decision making model.

Implications for Educational Research

The procedures leading to the modification of the model indicated the possibility that some improvement in the success of decision outcomes might result from use of the model. A research project might be designed to explore this possibility further; however, what appears to be needed to determine whether this model has utility is to have it employed in a school by a principal who is prepared to use it as a way of determining an appropriate decision process and to collect the principal's opinions of the utility and feasibility of using the model in this way.

While a decision model designed to improve the appropriateness of the process to be used in making a decision has some value, it is suggested that choice of an appropriate process is only a small part of the decision making process as a whole. Yetton and Vroom (1978) have suggested that the outcome of future research studies might be the development of a more complex theory of decision making. This might include the identification of more situational factors, identification of the skills appropriate to use of various processes and the interactional effects of decision implementation generally. Further concentration on choice of a decision process as a major focus for research into decision making might, therefore, be seen as being less profitable than investigation of these wider aspects.

Implications for the Preparation of Educational Administrators

There are some implications for the preparation of educational administrators arising from this study. At the theoretical level the study reinforces previous findings concerning the importance of participation. The relationship between the perceived degree of involvement and the ratings of decision outcomes was a strong feature of the study.

Attention might also be given to the design of techniques which would allow principals to detect and, perhaps, more appropriately respond to teachers' perceptions regarding the operation of schools. The task of managing requires the making of formative judgements as well as summative evaluations of the success of the various measures which are introduced in schools.

The identification and perhaps development of some competencies such as, for example, the skills involved in the actual utilization of each of the decision processes would be useful as would an attempt, through using the combined experience of practising administrators, to identify other situational factors which may be of importance in the school decision making situation.

Perhaps at a more general level, one lesson from this study is the danger of generalizing from one administrative situation to another quite distinctly different situation. The results of this study support a contention that schools are quite different organizations from those in which much of the research into organizational functioning has been conducted. It is important that these differences should be recognized and that the preparation of educational administrators be structured to take account of these differences.

CONCLUDING NOTE

This study, conducted in schools in a number of districts, has shown decision making in these schools to be successful and co-operative. The administrators who were contacted did not impose any conditions on the selection of schools, and every principal who was approached was prepared to take part if this was the investigator's wish.

All principals willingly made the time available for the interviews to be conducted inspite of the fact that the first interview was conducted when considerable time pressures existed. The willingness of principals to allow staff to make confidential judgements on the success of the administrator in the discharge of his decisional responsibility appeared to epitomize the co-operative nature of school decision making which results in the highly successful decision making reflected in the study.

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APPENDIX A

Interview Schedule - Interview 1

INTERVIEW SCHEDULE

1. Thank principal for being willing to assist.
2. Explain following:
   - (i) study requires identification in advance of decisions which are to be made;
   - (ii) it is not necessary for change to have resulted;
   - (iii) study is limited to those decisions for which principal has responsibility;
   - (iv) problems must have implications for several staff members. Avoid use of term subordinate and use teacher instead.
3. Explain that plan is to revisit school in new school year to get principal's perception of decision success.
4. Express hope that principals will be prepared to have three staff members comment on each decision.
5. Assure principals that both principal and staff questionnaire are brief.
6. Guarantee confidentiality in both collecting and using the information.
7. Invite principal to nominate any decision situation he is facing. Attempt to paraphrase for clarification but do not prompt.
8. When situation has been outlined, ask principal to respond to each of the situational attributes as they appear to him at this time. Use language of model but also paraphrase to ensure that meaning of terms is clear.
9. If no situations come to mind readily make some suggestions from list below. Set target of at least five cases.
10. Some areas from which case descriptions might arise are: (i) subject time allocations, (ii) allocation of teachers to classes,

(iii) class sizes and split grades, (iv) budget matters, (v) reporting policies, (vi) student supervision arrangements, (vii) involvement in extra-curricular matters, (viii) disciplinary policies, (ix) acting appointments, (x) allocation of allowance carrying, non-substantive positions, (xi) specialist teaching roles, (xii) use of teaching aides, (xiii) testing policies, (xiv) promotion of students, (xv) selection of text and learning materials, (xvi) curriculum associated matters, (xvii) policies regarding parental involvement, (xviii) arranging the school calendar, (xix) attendance at in-service activities.

11. Indicate proposed time line and willingness to share findings resulting from the study.
12. Repeat thanks and indicate that appointment will be sought for subsequent interview in last week of September.

APPENDIX B

Interview Schedule - Interview 2

INTERVIEW SCHEDULE - INTERVIEW 2

1. Recall previous meeting.
2. Remind principal of earlier request to involve staff but assure that this involvement is not essential.
3. Outline two-part nature of present visit:
    (i) filling out of short questionnaire on administrative decision making, and
    (ii) discussion of each of previous decisions.
4. Give principal one copy of Principal Questionnaire to consider and retain and ask for co-operation in helping researcher fill out form.
5. Explain why each item is being collected so that there are not misgivings about staff being asked to respond.
6. Stress that this questionnaire seeks information about all of the administrative decisions made in the school which have implications for staff not only those collected previously.
7. Explain the purpose of question 9 on the questionnaire and the way it would be scored, i.e., that a score of 3 means that involving staff has little effect, a score of 2 or 4 means a marginal change in one or other direction and 1 or 5 a significant change. Explain that "time" refers to the time required to make and communicate the decision as well as gain at least an acceptable measure of compliance with it.
8. Give principal copies of previously collected cases. Check first case description to see if the important elements were isolated.
9. Ask for brief description of what happened, e.g., was the decision

implemented or was there some hitch? Seek some indication of sequence of events. Brief notes to be made of responses.

10. Taken as a whole, do you consider the decision to have been successful?
11. Draw principal's attention back to retained copy of the decision processes and ask, "Which decision process do you believe most closely resembles that used in making this decision?"
12. Explain what is meant by "making the decision process to be used explicit" before asking whether this is done. Invite comments on whether or not this is a significant consideration.
13. Remind principal of what is meant by "quality" of the decision in this context, i.e., amount and relevance of information used and the conformance of the decision with this information. Ask for rating of quality of this decision on 7-point scale.
14. Repeat process detailed in 13 for staff acceptance and overall effectiveness, defined as success of the decision in achieving the organizational goals.
15. How important was this decision in terms of the total operation of the school? Rate on a 5-point scale.
16. Ask principal to answer the questions regarding the decision attributes. Compare these with responses formerly given. Where there are differences, attempt to derive if these are due to any finite issue. Do not probe this area too far.
17. If at the time of making the decision had you known what you now know, would you have used the same decision process?
18. In this particular situation did you have information or considerations unknown to staff members, e.g., were there student, parent or board concerns about which teachers had little information or

concerns?

19. Repeat steps 7 - 19 inclusive for each case.
20. Ask principal's permission for staff to be involved in filling out questionnaire. Review the brief description of each case and determine (1) whether the description would be meaningful, (2) if the principal is prepared to submit this question to staff members. Explain principal's right to nominate respondent but point out desirability of wide participation and involvement of those with particular knowledge of each case. Offer to write names on face sheet.
21. Thank principal for help and arrange most convenient mechanism for collecting staff questionnaires.

APPENDIX C

Invitation to Participate

ADMINISTRATIVE DECISION MAKING

The school Principal has kindly agreed to take part in a study of administrative decision making in schools which is being conducted through the Department of Educational Administration at the University of Alberta. It would be greatly appreciated if you too could assist with this investigation. To do so would require you to read the brief passage below and then to answer the questions on the attached sheet, preferably in the order that they are asked. This is likely to take only about five minutes.

If you are able to assist in this way it would be greatly appreciated and you can be assured that your responses will be treated in the strictest confidence.

Background

The study is concerned with administrative decisions in schools which have implications for a number of staff members. On the attached sheet your attention is drawn to a decision which was made in the school recently and you are asked to rate it on three criteria. The first, quality of the decision, refers to the amount and relevance of the information which was used in making the decision. If all of the available, relevant information was used then the decision would be considered as being of high quality, irrespective of how successful it was. The second criterion is acceptance which measures the extent to which staff members were prepared to try to make the decision work effectively. Overall effectiveness is the third criterion. This measures the extent to which the decision met the objectives it sought to achieve.

I hope it will be possible for you to assist me in the way outlined and I thank you in anticipation for your help.

APPENDIX D

Principal Questionnaire

DECISION MAKING - PRINCIPAL QUESTIONNAIRE

School Identification L Z E 1

School Information

1. Number of staff: a. teachers .... b. all others ....
2. Grades in school ....
3. Over the last two years, student enrolment has been:
   a. relatively stable .. b. increasing... decreasing...

Personal Information

4. Total years of teaching experience ....
5. Total experience as a Principal ....
6. Years in present position ....

Decision Making Information

rarely frequently

7. How frequently do you involve teachers in administrative decision making? 1 2 3 4 5
8. How frequently do you consider they would prefer to be involved? 1 2 3 4 5
9. Rate the effect of staff involvement in administrative decision making on each of the following factors.

little a great deal

   a. quality of the decision 1 2 3 4 5
   b. acceptance of the decision 1 2 3 4 5
   c. time taken to reach the decision 1 2 3 4 5

10. If you permit the staff to vote on an issue, do you usually consider the result as:
   a. being binding on you to implement? ....
   b. an indication of staff opinion which should be implemented if this is feasible? ....
   c. another piece of information which should be considered in reaching your decision? ....

Decision Processes

Would you please rate each of the decision processes described below according to its frequency of use in administrative decision making in your school? If you do not use one or more of these processes, would you please omit it from your rating?

Process	rarely		frequently		
S1 You solve the problem or make the decision yourself.	1	2	3	4	5
S2 You obtain information from staff members then you decide. Staff opinion is not sought.	1	2	3	4	5
S3 You share the problem with relevant staff individually and then make the decision yourself.	1	2	3	4	5
S4 You share the problem with relevant staff as a group and then you decide.	1	2	3	4	5
S5 You share the problem with relevant staff as a group and a vote is taken to determine majority preference.	1	2	3	4	5
S6 You share the problem with relevant staff as a group and continue the discussion until all are prepared to " go along with" the decision.	1	2	3	4	5
S7 You share the problem and attempt to reach agreement. Your role is that of chairman and you are willing to implement any solution which has the support of the entire group.	1	2	3	4	5

APPENDIX E

Teacher Questionnaire

DECISION MAKING - CONFIDENTIAL RESPONSE SHEET

Decision Identification L Z E 1

Background Information Please supply the following data:

1. Your total number of years of teaching experience ....
2. Your years of experience in this school ....
3. Sex of respondent ....

School Decision Making Please circle appropriate response:

Please rate the frequency of use of the following decision processes in administrative decision making in your school. If one or more of the processes is not used in the school would you please omit it from your ratings?

	rarely		frequently		
4a Principal makes decision without reference to other staff.	1	2	3	4	5
b. Principal seeks information but not staff opinion before making decision.	1	2	3	4	5
c. Principal seeks views of some individuals then makes the decision.	1	2	3	4	5
d. Principal shares the problem with group and then makes the decision.	1	2	3	4	5
e. Principal shares the problem with staff and a vote is taken.	1	2	3	4	5
f. Principal and staff discuss matter until all are prepared to "go along with" the decision.	1	2	3	4	5
g. Principal and staff discuss matter until unanimous decision is reached.	1	2	3	4	5
5. How frequently are you involved in administrative decision making?	1	2	3	4	5
6. How frequently would you prefer to be involved?	1	2	3	4	5

A recent situation in the school which required a decision to be made was to decide whether variations in class size were preferable to a split grade organization.

7. Do you consider that the decision that was made in the above case was a successful one? Yes ... No...
8. Would you have been quite willing for the Principal to have made this decision without consultation? Yes... No..
9. Of the seven decision processes described on the previous page, which do you consider to have been closest to that used in making the decision? a... b... c... d... e... f... g...
10. If you had been the Principal and had been required to resolve this problem which decision process would you have used? a...b...c...d...e...f...g...
11. If you had been the Principal and had been required to resolve this problem would you have made the same decision? Yes... No...

In the introductory notes, a distinction was made between decision quality, acceptance of the decision and overall effectiveness of the decision. Would you please rate each of these on the scale below?

	low						high
12. Quality of the decision	1	2	3	4	5	6	7
13. Acceptance of the decision	1	2	3	4	5	6	7
14. Overall effectiveness of the decision.	1	2	3	4	5	6	7

Thank you for your assistance.

APPENDIX F

Principal's Interview Notes

ADMINISTRATIVE DECISION MAKING - PRINCIPAL'S COPY

Decision Identification L Z E 1

The pattern of enrolments in the school is such that if classes of approximately equal size are to be formed, there will need to be at least one split grade group in the 1979-1980 school year. Most teachers prefer not to take such classes and many parents complain if their child is placed in such a class.

An alternative solution is available. By tolerating differences in class sizes it is possible for single grade groups to be formed. Class sizes would still be within the limits laid down by the school district. This course of action would mean that there would be substantial variations in class size.

Proposed Teacher Question

A recent situation in the school which required a decision to be made was that concerning whether variations in class size was preferable to having a split grade organization.

APPENDIX G

Case Report - Class Size

ADMINISTRATIVE DECISION MAKING - INTERVIEWER'S COPY

Decision Identification L Z E 1

This is an elementary school with an enrolment of about 500. The principal is quite experienced and has been in this school for several years. The school has only 20 rooms and thus, there is a limit to the number of classes which can be formed irrespective of the number of teachers on staff. The pattern of enrolments is such that if classes of reasonably comparable size are to be formed there will have to be at least one split grade. Teachers and parents prefer not to have this happen. By tolerating classes of different sizes the need for split grades could be overcome. The school district allows principals some flexibility in this regard. What should be done?

Teacher Question

Is it preferable to have variations in class sizes and no split grades or should class sizes be kept about equal.

Attributes	Q	I	S	A	P.P	G	C	No	F.Set	Consis.
Interview 1	Y	N	N	Y	N	N	Y	12	C11	Yes
Interview 2	Y	N	N	Y	N	N	Y	12	C11	Yes

Process S 4 Explicit N Success Y Quality 6 Accept. 5 Effec 6
Importance 4 Ret. Change N Function I Mintz. R Castore 3

Decision and Comments

It was decided to avoid split grades. Classes vary in size from 21 to 32. In Grade 4 there are 63 children in 2 classes while in Grade 5 there are 67 in 3 classes. Some concessions have been made to the two teachers in Grade 4 in respect of supervision.

APPENDIX H

Case Report - Supervision

ADMINISTRATIVE DECISION MAKING - INTERVIEWER'S COPY

Decision Identification

This is a medium size junior high school with 500+ enrolment. Board policy is that students who live in the neighbourhood should go home for lunch each day. The practice of students remaining at school has developed and much of the extra-curricular activity is concentrated into the lunch period. Teachers who were doing extra-curricular tasks once catered for almost all those who stayed at lunch time but the practice has become common and supervision of those not taking part in club activities has become an onerous task. Three alternatives were suggested (1) enforce the Board ruling, (2) continue as at present,(3) accept non-compensated supervision.

Teacher Question

What should be the school policy regarding lunch hour supervision.

Attributes	Q	I	S	A	P.P	G	C	No	F.Set	Consis.
Interview 1	Y	N	N	Y	N	N	N	12	C11	Yes
Interview 2	Y	Y		Y	N	Y	N	5	G11	No

Process S4 Explicit N Success Y Quality 5 Accept. 6 Effec.6
Importance 4 Ret. Change Y Function S Mintz. N Castore 3

Decision and Comments

The issue was that teachers who were doing the supervision had been receiving time off in lieu. As a result there was less free time for all teachers. The decision was something of a compromise. Students who represent the school in team games and drama club members are allowed to stay but teachers supervising these students do not get time in lieu. Note the change of attributes at the second interview.

APPENDIX I

Case Report - Learning Materials

ADMINISTRATIVE DECISION MAKING - INTERVIEWER'S COPY

Decision Identification

This is a medium size elementary school in a prosperous district. The principal reports that there is no real difficulty in raising quite substantial sums of money.

Provincial regulations require the institution of a new reading scheme by 1981. Two alternatives are presently recommended but there is little enthusiasm for either by staff members.

Because it has been known that the schemes presently in use are to be replaced, little money has been spent on replacement or upkeep. As a result the materials are much less attractive than would normally be the case. As a result there is pressure to replace but no suitable replacement.

Teacher Question

Should the present reading scheme be replaced for 1979-1980 or should this be deferred for one more year?

Attributes	Q	I	S	A	P.P	G	C	No	F.Set	Consis.
Interview 1	Y	N	N	Y	N	Y	N	11	G11	No
Interview 2	Y	N	N	Y	N	Y	N	11	G11	No

Process S5 Explicit Y Success Y Quality 5 Accept. 5 Effec. 5
Importance 4 Ret. Change N Function M Mintz. R Castore 1

Decision and Comments

In June after extended discussion it was decided, through a voting procedure, to postpone purchase of the materials. The principal views a vote as advice but concurred. In September the matter was re-opened and a decision made to go ahead immediately with replacement of materials for the lower grades. Again a voting procedure was used.

APPENDIX J

Case Report - Timetable

ADMINISTRATIVE DECISION MAKING - INTERVIEWER'S COPY

Decision Identification

For some time the school has had a "satellite" school at another location. This has now been made independent. The specialist teachers who used to provide help to both schools are to be absorbed into the parent school staff. Enrolments in this school are stationary. All of the specialist staff wish to be retained on these duties but the equivalent of at least one teacher must return to class room duties. Only one teaching position is available and this is in Grade 6. None of the specialists have taught at this level and at least one has difficulty in relating to older children. How can the most effective use be made of the specialist teachers?

Teacher Question

How could teachers who had previously been full time specialists be most effectively used in the school?

Attributes	Q	I	S	A	P.P	G	C	No	F.Set	Consis.
Interview 1	Y	N	Y	A	Y	N	Y	7	A11-C11	No
Interview 2	Y	N	N	Y	N	N	Y	12	C11	No

Process S6 Explicit Y Success Y Quality 5 Accept. 6 Effec. 5
Importance 5 Ret. Change Y Function T Mintz. R Castore 1

Decision and Comments

Each of the specialist teachers had their specialist duties reduced to 75% of the total. For the rest of the time the three teachers share the teaching of a Grade 6 class. The principal concedes that teacher acceptance rather than decision quality was the concern in this case.

Note interview 1 responses to structure and prior probability questions.

APPENDIX K

Case Report - Instituting a Course

ADMINISTRATIVE DECISION MAKING - INTERVIEWER'S COPY

Decision Identification

This is a small but quite rapidly growing school. The principal has been at the school since it opened. In its first two years of operation the school has had only one class in each grade and it has not been necessary to establish a grouping policy. In 1979-1980 there will be two classes in Grade 1 and a grouped Grade 2-3 class.

The principal has quite a strong preference for "alphabetical" or heterogeneous grouping. There will be several new staff members in the school in the new school year. It has not been possible to discuss this matter with them.

Teacher Question

What should be the school's grouping policy?

Attributes	Q	I	S	A	P.P	G	C	No	F.Set	Consis.
Interview 1	Y	Y		Y	Y	Y	Y	3	A1- G11	Yes
Interview 2	Y	Y		Y	N	Y		5	G11	Yes

Process S6 Explicit N Success Y Quality 6 Accept. 7 Effec. 7
Importance 5 Ret. Change Y Function I Mintz. N Castore 3

Decision and Comments

Initially alphabetical groups were established. As differing instructional needs have emerged children have been grouped for these but return to the alphabetical groups for other activities.

APPENDIX L

Teachers' Perceptions of Illustrative Cases

TEACHERS' PERCEPTIONS OF ILLUSTRATIVE CASES

Case	Process used	Success	Ratings		
			Quality	Acceptance	Effectiveness
Appendix G	S5	Yes	7	7	7
	S5	Yes	7	7	7
	S4	Yes	6	6	6
Appendix H	S5	Yes	6	6	6
	S3	No	3	2	4
	S4	Yes	7	5	7
Appendix I	S2	Yes	6	6	6
	S6	Yes	7	7	7
	S5	Yes	5	6	5
Appendix J	S3	Yes	6	6	6
	S3	Yes	6	6	6
	S2	Yes	5	7	5
Appendix K	S5	Yes	6	6	6
	S4	Yes	7	7	7
	S3	Yes	7	7	7

APPENDIX M

Recoding of Acceptance Attribute

Recoding of Acceptance Attribute

Principals' perceptions of the acceptance attribute were reviewed and, as a result, 12 cases were recoded. Because recoding this attribute has implications for the prior probability attribute, a change in the acceptance attribute does not necessarily lead to a change in the feasible set. The 12 cases are very briefly described below. The first column shows the principal's coding, the second the investigator's coding and the third column contains the case description and the result, if any, of the change.

P	I	Nature of Decision and Result
No	Yes	Allocation of teacher and class to unsuitable room. No change in feasible set.
Yes	No	"Across the board" budget reduction of 15 per cent. Successful S1 decision became consistent.
No	Yes	Differential cuts in class budgets being considered. No change in feasible set.
No	Yes	Decision not to replace subject coordinator when help was required from staff member. No change.
No	Yes	Implementation of an integrated language arts program in place of separate subject approach. No change in feasible set.
No	Yes	As for case above.
No	Yes	Selection of one teacher from seven for transfer to non-preferred position. No change.
Yes	No	Action at county level obviated need for action in implementing the decision. No change.
Yes	No	Desire of some teachers for provision of more funds to attend professional development courses. Recoding made successful S4 decision consistent with the feasible set.

P	I	Nature of Decision and Result
No	Yes	Major restructuring of timetable to implement four day week proposal. No change in feasible set.
Yes	No	Setting of notional limits on individual class budget allocations as upper limit of individual teacher requests. No change in feasible set.
Yes	No	Teacher required to take split-grade class could not be recruited from within school and willingness to take split-grade was made condition of appointment for new teacher. Staff acceptance thus was not involved. Changed feasible set but successful decision remained inconsistent.